

Naimark's problem

A single unital, simple, infinite-dimensional C^* -algebra has one unitary-equivalence class of nonzero irreducible representations and a faithful tracial representation on a separable Hilbert space. The normalized trace of its CAR subalgebra extends uniquely among all states of the same generated algebra.

Exact source: MathlibAnnex v0.4.0 · 466 declaration tiles · 73 levels

The construction distinguishes faithful representability on a separable Hilbert space from irreducible representability on such a space. Its cardinality and norm-density consequences connect the fixed example to a general obstruction for Naimark counterexamples.

The principal construction concerns complex C^* -algebras and nonzero irreducible representations. Its fixed algebra and separable faithful tracial representation require no CH hypothesis. CH enters only in the statement equating the continuum with aleph one and the corresponding density-character existence result. The general reverse density obstruction also allows nonunital algebras.

No canonical Declaration Cards are active in this Companion. Source qualification, source-exposition correspondence and human mathematical review are separate records; no line-by-line independent human proof audit is claimed. The CH biconditional is not a forcing or metatheoretic independence certificate. Corollary 6.2 of Brief Draft R1 is mapped to exact formal endpoints together with a standard Hilbert-space consequence. The orthonormal-basis cardinality statement is the standard consequence, not a direct Lean endpoint supplied in this release; it is not a Hamel-dimension statement.

Declaration Cards are in preparation. These 466 tiles describe exact declarations and their Project graph; no canonical Card links are active.

[Exact Project source](#)

[Exact source manifest](#)

Proof architecture

CAR source, pure states and decreasing flags — The CAR source supplies the pure-state compression and decreasing flags used to distinguish the selected irreducible models. The normalized trace controls the same flags in the later tracial argument.

Shell matching and the generated algebra — Matched shells and their strong operator sums define the concrete generators. The construction keeps one fixed generated C^* -algebra rather than replacing it by another algebra with similar relations.

Capture and classification of irreducible representations — The capture argument compares nonzero irreducible representations of the generated algebra with its fixed irreducible model. The resulting endpoint gives the single equivalence class and the ordinary counterexample properties.

State extension and the tracial GNS space — Extend the CAR trace to a state of the same algebra. The CAR-cyclic subspace reduces the target generators and equals the full cyclic GNS space. The extension is then identified uniquely, and the tracial and faithful properties are obtained on this same model.

Faithful separable representation without separable irreducibles — The trace GNS construction gives a faithful representation on a separable Hilbert space. This representation is reducible; the exclusion theorem applies to every nonzero irreducible representation on a separable Hilbert space, not merely to the representation selected here.

Density, cardinality and CH — Faithful separable representability bounds the cardinality of the fixed algebra by the continuum. The general lower bound for dense subsets of ordinary Naimark counterexamples yields equality of its cardinality and norm density with the continuum. Combining the example with the general obstruction gives the CH biconditional for density aleph one.

Boundary Inputs

4939 exact Boundary Inputs: EXTERNAL_COMPILED_DECLARATION 3571, OMITTED_INTERNAL_NATIVE_DECLARATION 1368. Selected reachability is retained through every omitted internal declaration.

OfNat.ofNat — Compiled external provider used by selected Project declarations.

Complex — Compiled external provider used by selected Project declarations.

Eq — Compiled external provider used by selected Project declarations.

DFunLike.coe — Compiled external provider used by selected Project declarations.

Complex.instSemiring — Compiled external provider used by selected Project declarations.

Semiring.toNonAssocSemiring — Compiled external provider used by selected Project declarations.

Zero.toOfNat0 — Compiled external provider used by selected Project declarations.

AddCommMonoid.toAddMonoid — Compiled external provider used by selected Project declarations.

AddMonoid.toAddZeroClass — Compiled external provider used by selected Project declarations.

AddZeroClass.toAddZero — Compiled external provider used by selected Project declarations.

Complex.instNonUnitalCommRing — Compiled external provider used by selected Project declarations.

NonUnitalCommRing.toNonUnitalNonAssocCommRing — Compiled external provider used by selected Project declarations.

NonUnitalNonAssocCommRing.toNonUnitalNonAssocRing — Compiled external provider used by selected Project declarations.

congrArg — Compiled external provider used by selected Project declarations.

AddZero.toZero — Compiled external provider used by selected Project declarations.

Dependency-first reading route

Level 0

concreteTarget

MathlibAnnex.CStarAlgebra.AtomicConstruction.concreteTarget

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: None in this Project

Used by in this Project: ambientInclusion, instIsClosed, generator, sourceHom, AtomicTarget

[Read exact source](#)

RepresentativeShellFamily

MathlibAnnex.CStarAlgebra.CAR.RepresentativeShellFamily

Exact source-authored inductive in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: None in this Project

Used by in this Project: ShellFamilyEndpoint, homogeneityShellFamily, representativeShellData, representedFinalFlag

[Read exact source](#)

Stage

MathlibAnnex.CStarAlgebra.CAR.Stage

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: None in this Project

Used by in this Project: amplify, finrank_stage, matrixUnit, rootLinear, rootProjection, stageFiniteDimensional, stagelsSimpleRing, stageNontrivial, stageTraceLinear

[Read exact source](#)

stepIndexEquiv

MathlibAnnex.CStarAlgebra.CAR.stepIndexEquiv

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: None in this Project

Used by in this Project: step

[Read exact source](#)

transportBudget

MathlibAnnex.CStarAlgebra.CAR.transportBudget

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: None in this Project

Used by in this Project: summable_transportBudget, tendsto_transportBudget_zero, transportBudget_pos

[Read exact source](#)

IsSimpleCStarAlgebra

MathlibAnnex.CStarAlgebra.IsSimpleCStarAlgebra

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: None in this Project

Used by in this Project: isSimpleCStarAlgebra_limit, isSimpleCStarAlgebra_shellFamilyTarget

[Read exact source](#)

exists_shell_of_approximately_inner

MathlibAnnex.CStarAlgebra.exists_shell_of_approximately_inner

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: None in this Project

Used by in this Project: exists_shell_family_of_approximately_inner

[Read exact source](#)

stateSpace

MathlibAnnex.CStarAlgebra.stateSpace

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: None in this Project

Used by in this Project: eq_rootFunctional_of_apply_rootProjection_eq_one, restrictState_mem_stateSpace, rootFunctional_mem_stateSpace, rootState_mem_stateSpace, IsPureState, positiveLinearMapOfMemStateSpace

[Read exact source](#)

Level 1

ambientInclusion

MathlibAnnex.CStarAlgebra.AtomicConstruction.ambientInclusion

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: concreteTarget

Used by in this Project: ambientInclusion_injective, exists_irreducible_atomicShellModel, intertwines_concreteTarget_of_generators

[Read exact source](#)

instIsClosed

MathlibAnnex.CStarAlgebra.AtomicConstruction.concreteTarget.instIsClosed

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: concreteTarget

Used by in this Project: eq_top_of_source_mem_of_generator_mem, exists_irreducible_atomicShellModel, intertwines_concreteTarget_of_generators, reduces_concreteTarget_of_generators

[Read exact source](#)

generator

MathlibAnnex.CStarAlgebra.AtomicConstruction.generator

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: concreteTarget

Used by in this Project: eq_top_of_source_mem_of_generator_mem, generator_coe, intertwines_concreteTarget_of_generators, reduces_concreteTarget_of_generators, representedGeneratorUnitary

[Read exact source](#)

sourceHom

MathlibAnnex.CStarAlgebra.AtomicConstruction.sourceHom

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: concreteTarget

Used by in this Project: eq_top_of_source_mem_of_generator_mem, intertwines_concreteTarget_of_generators, reduces_concreteTarget_of_generators, sourceHom_coe, sourceHom_injective, restrictedRepresentation

[Read exact source](#)

ShellFamilyEndpoint

MathlibAnnex.CStarAlgebra.CAR.ShellFamilyEndpoint

Exact source-authored inductive in the Naimark construction.

Route / section: irreducible-capture · separable-faithful

Immediate prerequisites in this Project: RepresentativeShellFamily

Used by in this Project: AtomicCounterexampleEndpoint, shellFamilyEndpoint

[Read exact source](#)

amplify

MathlibAnnex.CStarAlgebra.CAR.amplify

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: Stage

Used by in this Project: amplify_injective, step

[Read exact source](#)

finrank_stage

MathlibAnnex.CStarAlgebra.CAR.finrank_stage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: Stage

Used by in this Project: not_finiteDimensional

[Read exact source](#)

matrixUnit

MathlibAnnex.CStarAlgebra.CAR.matrixUnit

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: Stage

Used by in this Project: limitMatrixUnit, matrixUnit_apply, matrixUnit_mul_of_ne, matrixUnit_mul_same, stage_eq_sum_smul_matrixUnit, star_matrixUnit, sum_matrixUnit_diag

[Read exact source](#)

rootLinear

MathlibAnnex.CStarAlgebra.CAR.rootLinear

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: Stage

Used by in this Project: rootFunctional, rootLinear_nonneg

[Read exact source](#)

rootProjection

MathlibAnnex.CStarAlgebra.CAR.rootProjection

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: Stage

Used by in this Project: rootFlag, rootProjection_mul_mul, stageTrace_rootProjection

[Read exact source](#)

stageFiniteDimensional

MathlibAnnex.CStarAlgebra.CAR.stageFiniteDimensional

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: Stage

Used by in this Project: stageSeparableSpace

[Read exact source](#)

stagelsSimpleRing

MathlibAnnex.CStarAlgebra.CAR.stagelsSimpleRing

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: Stage

Used by in this Project: rootRepresentation_stage_injective

[Read exact source](#)

stageNontrivial

MathlibAnnex.CStarAlgebra.CAR.stageNontrivial

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: Stage

Used by in this Project: preNontrivial

[Read exact source](#)

stageTraceLinear

MathlibAnnex.CStarAlgebra.CAR.stageTraceLinear

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: Stage

Used by in this Project: norm_stageTraceLinear_le

[Read exact source](#)

summable_transportBudget

MathlibAnnex.CStarAlgebra.CAR.summable_transportBudget

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: transportBudget

Used by in this Project: leftAutomorphisms_cauchy, leftAutomorphisms_symm_cauchy, rightAutomorphisms_cauchy, rightAutomorphisms_symm_cauchy

[Read exact source](#)

tendsto_transportBudget_zero

MathlibAnnex.CStarAlgebra.CAR.tendsto_transportBudget_zero

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: transportBudget

Used by in this Project: tendsto_outputAutomorphisms_state

[Read exact source](#)

transportBudget_pos

MathlibAnnex.CStarAlgebra.CAR.transportBudget_pos

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: transportBudget

Used by in this Project: nonempty_initialState, nonempty_transition

[Read exact source](#)

IsPureState

MathlibAnnex.CStarAlgebra.IsPureState

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: stateSpace

Used by in this Project: PureStateHomogeneity, RepresentativeShellData, hasInnerIntertwiningSequence_of_pure, isPureState_rootFunctional, SelectedGNS

[Read exact source](#)

exists_shell_family_of_approximately_inner

MathlibAnnex.CStarAlgebra.exists_shell_family_of_approximately_inner

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: exists_shell_of_approximately_inner

Used by in this Project: representativeShellDataOfHomogeneity

[Read exact source](#)

positiveLinearMapOfMemStateSpace

MathlibAnnex.CStarAlgebra.positiveLinearMapOfMemStateSpace

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: stateSpace

Used by in this Project: exists_nonzero_targetFixedSpace, traceExtensionPositive, positiveLinearMapOfMemStateSpace_one

[Read exact source](#)

Level 2

ambientInclusion_injective

MathlibAnnex.CStarAlgebra.AtomicConstruction.ambientInclusion_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: ambientInclusion

Used by in this Project: shellFamilyInclusion_injective

[Read exact source](#)

eq_top_of_source_mem_of_generator_mem

MathlibAnnex.CStarAlgebra.AtomicConstruction.eq_top_of_source_mem_of_generator_mem

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: instIsClosed, generator, sourceHom

Used by in this Project: starAlgHom_ext

[Read exact source](#)

generator_coe

MathlibAnnex.CStarAlgebra.AtomicConstruction.generator_coe

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: generator

Used by in this Project: exists_irreducible_atomicShellModel

[Read exact source](#)

intertwines_concreteTarget_of_generators

MathlibAnnex.CStarAlgebra.AtomicConstruction.intertwines_concreteTarget_of_generators

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: ambientInclusion, instIsClosed, generator, sourceHom

Used by in this Project: ambientInclusion_unitaryEquivalent

[Read exact source](#)

reduces_concreteTarget_of_generators

MathlibAnnex.CStarAlgebra.AtomicConstruction.reduces_concreteTarget_of_generators

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · trace-gns

Immediate prerequisites in this Project: instIsClosed, generator, sourceHom

Used by in this Project: isIrreducible_restrictedRepresentation_of_all_fixed_bot, reduces_cyclicSubspace_of_trace

[Read exact source](#)

sourceHom_coe

MathlibAnnex.CStarAlgebra.AtomicConstruction.sourceHom_coe

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: sourceHom

Used by in this Project: exists_irreducible_atomicShellModel

[Read exact source](#)

sourceHom_injective

MathlibAnnex.CStarAlgebra.AtomicConstruction.sourceHom_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: sourceHom

Used by in this Project: exists_completedAtomicShellModel

[Read exact source](#)

amplify_injective

MathlibAnnex.CStarAlgebra.CAR.amplify_injective

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: amplify

Used by in this Project: step_injective

[Read exact source](#)

matrixUnit_apply

MathlibAnnex.CStarAlgebra.CAR.matrixUnit_apply

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: matrixUnit

Used by in this Project: not_finiteDimensional_range_rootCorner

[Read exact source](#)

matrixUnit_mul_of_ne

MathlibAnnex.CStarAlgebra.CAR.matrixUnit_mul_of_ne

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: matrixUnit

Used by in this Project: limitMatrixUnit_mul

[Read exact source](#)

matrixUnit_mul_same

MathlibAnnex.CStarAlgebra.CAR.matrixUnit_mul_same

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: matrixUnit

Used by in this Project: limitMatrixUnit_mul

[Read exact source](#)

norm_stageTraceLinear_le

MathlibAnnex.CStarAlgebra.CAR.norm_stageTraceLinear_le

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: stageTraceLinear

Used by in this Project: stageTrace

[Read exact source](#)

rootFunctional

MathlibAnnex.CStarAlgebra.CAR.rootFunctional

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootLinear

Used by in this Project: eq_rootFunctional_of_apply_rootProjection_eq_one, rootFunctional_apply, rootFunctional_mem_stateSpace, rootFunctional_step

[Read exact source](#)

rootLinear_nonneg

MathlibAnnex.CStarAlgebra.CAR.rootLinear_nonneg

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootLinear

Used by in this Project: preRootFunctional_star_mul_self_nonneg, rootPositiveFunctional

[Read exact source](#)

rootProjection_mul_mul

MathlibAnnex.CStarAlgebra.CAR.rootProjection_mul_mul

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootProjection

Used by in this Project: isStarProjection_rootProjection, rootFlag_mul_ofStage_mul

[Read exact source](#)

stageSeparableSpace

MathlibAnnex.CStarAlgebra.CAR.stageSeparableSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: stageFiniteDimensional

Used by in this Project: preSeparableSpace

[Read exact source](#)

stage_eq_sum_smul_matrixUnit

MathlibAnnex.CStarAlgebra.CAR.stage_eq_sum_smul_matrixUnit

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: matrixUnit

Used by in this Project: ofStage_eq_sum_smul_limitMatrixUnit

[Read exact source](#)

star_matrixUnit

MathlibAnnex.CStarAlgebra.CAR.star_matrixUnit

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: matrixUnit

Used by in this Project: star_limitMatrixUnit

[Read exact source](#)

step

MathlibAnnex.CStarAlgebra.CAR.step

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: amplify, stepIndexEquiv

Used by in this Project: embed, rootFunctional_step, stageTrace_step, step_injective

[Read exact source](#)

sum_matrixUnit_diag

MathlibAnnex.CStarAlgebra.CAR.sum_matrixUnit_diag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: matrixUnit

Used by in this Project: sum_limitMatrixUnit_diag

[Read exact source](#)

SelectedGNS

MathlibAnnex.CStarAlgebra.PureState.SelectedGNS

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: IsPureState

Used by in this Project: SelectedAtomicHilbert, selectedRepresentation, selectedVector

[Read exact source](#)

positiveLinearMapOfMemStateSpace_one

MathlibAnnex.CStarAlgebra.positiveLinearMapOfMemStateSpace_one

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: positiveLinearMapOfMemStateSpace

Used by in this Project: hasInnerIntertwiningSequence_of_pure, isSimpleCStarAlgebra_shellFamilyTarget

[Read exact source](#)

Level 3

exists_irreducible_atomicShellModel

MathlibAnnex.CStarAlgebra.AtomicConstruction.exists_irreducible_atomicShellModel

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: ambientInclusion, instIsClosed, generator_coe, sourceHom_coe

Used by in this Project: exists_irreducible_pureAtomicShellModel

[Read exact source](#)

starAlgHom_ext

MathlibAnnex.CStarAlgebra.AtomicConstruction.starAlgHom_ext

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: eq_top_of_source_mem_of_generator_mem

Used by in this Project: intertwines_of_source_of_generators

[Read exact source](#)

embed

MathlibAnnex.CStarAlgebra.CAR.embed

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: step

Used by in this Project: embed_refl, embed_succ

[Read exact source](#)

isStarProjection_rootProjection

MathlibAnnex.CStarAlgebra.CAR.isStarProjection_rootProjection

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootProjection_mul_mul

Used by in this Project: eq_rootFunctional_of_apply_rootProjection_eq_one, isStarProjection_rootFlag, step_rootProjection_mul

[Read exact source](#)

rootFunctional_apply

MathlibAnnex.CStarAlgebra.CAR.rootFunctional_apply

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootFunctional

Used by in this Project: rootState_rootFlag, step_rootProjection_mul

[Read exact source](#)

rootFunctional_step

MathlibAnnex.CStarAlgebra.CAR.rootFunctional_step

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootFunctional, step

Used by in this Project: rootFunctional_embed, step_rootProjection_mul

[Read exact source](#)

rootPositiveFunctional

MathlibAnnex.CStarAlgebra.CAR.rootPositiveFunctional

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootLinear_nonneg

Used by in this Project: rootPositiveFunctional_one

[Read exact source](#)

stageTrace

MathlibAnnex.CStarAlgebra.CAR.stageTrace

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: norm_stageTraceLinear_le

Used by in this Project: norm_stageTrace_le, stageTrace_apply, stageTrace_mul_comm, stageTrace_rootProjection

[Read exact source](#)

step_injective

MathlibAnnex.CStarAlgebra.CAR.step_injective

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: amplify_injective, step

Used by in this Project: norm_step

[Read exact source](#)

SelectedAtomicHilbert

MathlibAnnex.CStarAlgebra.PureState.SelectedAtomicHilbert

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: SelectedGNS

Used by in this Project: selectedAtomicRepresentation, selectedEmbedding

[Read exact source](#)

selectedRepresentation

MathlibAnnex.CStarAlgebra.PureState.selectedRepresentation

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: SelectedGNS

Used by in this Project: selectedAtomicRepresentation, selectedRootRepresentation_injective, no_unitaryIntertwiner_selectedRepresentation, selected_vectorFunctional

[Read exact source](#)

selectedVector

MathlibAnnex.CStarAlgebra.PureState.selectedVector

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: SelectedGNS

Used by in this Project: norm_selectedVector, selected_vectorFunctional

[Read exact source](#)

Level 4

intertwines_of_source_of_generators

MathlibAnnex.CStarAlgebra.AtomicConstruction.intertwines_of_source_of_generators

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: starAlgHom_ext

Used by in this Project: exists_pointed_unitary_of_trace_of_cyclic

[Read exact source](#)

embed_refl

MathlibAnnex.CStarAlgebra.CAR.embed_refl

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: embed

Used by in this Project: embed_apply, rootFunctional_embed, stageTrace_embed, toPreCAR_embed

[Read exact source](#)

embed_succ

MathlibAnnex.CStarAlgebra.CAR.embed_succ

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: embed

Used by in this Project: embed_apply, rootFunctional_embed, stageTrace_embed, toPreCAR_embed

[Read exact source](#)

eq_rootFunctional_of_apply_rootProjection_eq_one

MathlibAnnex.CStarAlgebra.CAR.eq_rootFunctional_of_apply_rootProjection_eq_one

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isStarProjection_rootProjection, rootFunctional, stateSpace

Used by in this Project: isPureState_rootFunctional

[Read exact source](#)

norm_stageTrace_le

MathlibAnnex.CStarAlgebra.CAR.norm_stageTrace_le

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: stageTrace

Used by in this Project: norm_preTraceLinear_le

[Read exact source](#)

norm_step

MathlibAnnex.CStarAlgebra.CAR.norm_step

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: step_injective

Used by in this Project: isometry_step

[Read exact source](#)

rootPositiveFunctional_one

MathlibAnnex.CStarAlgebra.CAR.rootPositiveFunctional_one

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootPositiveFunctional

Used by in this Project: rootFunctional_mem_stateSpace, rootState_one

[Read exact source](#)

stageTrace_apply

MathlibAnnex.CStarAlgebra.CAR.stageTrace_apply

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: stageTrace

Used by in this Project: stageTrace_one, stageTrace_star_mul_self_nonneg, stageTrace_step

[Read exact source](#)

stageTrace_mul_comm

MathlibAnnex.CStarAlgebra.CAR.stageTrace_mul_comm

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: stageTrace

Used by in this Project: trace_mul_comm

[Read exact source](#)

stageTrace_rootProjection

MathlibAnnex.CStarAlgebra.CAR.stageTrace_rootProjection

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: rootProjection, stageTrace

Used by in this Project: trace_rootFlag

[Read exact source](#)

step_rootProjection_mul

MathlibAnnex.CStarAlgebra.CAR.step_rootProjection_mul

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isStarProjection_rootProjection, rootFunctional_apply, rootFunctional_step

Used by in this Project: rootFlag_succ_le

[Read exact source](#)

no_unitaryIntertwiner_selectedRepresentation

MathlibAnnex.CStarAlgebra.PureState.no_unitaryIntertwiner_selectedRepresentation

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: selectedRepresentation

Used by in this Project: exists_irreducible_pureAtomicShellModel, isOrtho_cyclicSubspace_of_selectedStates, selected_commonFixedProjection_eq_zero

[Read exact source](#)

norm_selectedVector

MathlibAnnex.CStarAlgebra.PureState.norm_selectedVector

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: selectedVector

Used by in this Project: selectedVector_fixed_transportedFlag, instNontrivial, isIrreducible_selectedRepresentation

[Read exact source](#)

selectedEmbedding

MathlibAnnex.CStarAlgebra.PureState.selectedEmbedding

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: SelectedAtomicHilbert

Used by in this Project: exists_irreducible_pureAtomicShellModel, exists_selectedAtomicCyclicIsometry, iInf_range_atomic_transportedFlag_eq_span

[Read exact source](#)

selected_vectorFunctional

MathlibAnnex.CStarAlgebra.PureState.selected_vectorFunctional

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: selectedRepresentation, selectedVector

Used by in this Project: exists_selectedCyclicUnitary, selectedVector_fixed_transportedFlag, isIrreducible_selectedRepresentation

[Read exact source](#)

Level 5

embed_apply

MathlibAnnex.CStarAlgebra.CAR.embed_apply

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: embed_refl, embed_succ

Used by in this Project: embed_trans

[Read exact source](#)

isometry_step

MathlibAnnex.CStarAlgebra.CAR.isometry_step

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: norm_step

Used by in this Project: isometry_stage

[Read exact source](#)

rootFunctional_embed

MathlibAnnex.CStarAlgebra.CAR.rootFunctional_embed

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: embed_refl, embed_succ, rootFunctional_step

Used by in this Project: algRootLinear

[Read exact source](#)

rootFunctional_mem_stateSpace

MathlibAnnex.CStarAlgebra.CAR.rootFunctional_mem_stateSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootFunctional, rootPositiveFunctional_one, stateSpace

Used by in this Project: isPureState_rootFunctional

[Read exact source](#)

stageTrace_one

MathlibAnnex.CStarAlgebra.CAR.stageTrace_one

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: stageTrace_apply

Used by in this Project: trace_one

[Read exact source](#)

stageTrace_star_mul_self_nonneg

MathlibAnnex.CStarAlgebra.CAR.stageTrace_star_mul_self_nonneg

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: stageTrace_apply

Used by in this Project: trace_star_mul_self_nonneg

[Read exact source](#)

stageTrace_step

MathlibAnnex.CStarAlgebra.CAR.stageTrace_step

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: stageTrace_apply, step

Used by in this Project: stageTrace_embed

[Read exact source](#)

instNontrivial

MathlibAnnex.CStarAlgebra.PureState.SelectedGNS.instNontrivial

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: norm_selectedVector

Used by in this Project: exists_irreducible_pureAtomicShellModel, selectedRootRepresentation_injective, selected_commonFixedProjection_eq_zero

[Read exact source](#)

isIrreducible_selectedRepresentation

MathlibAnnex.CStarAlgebra.PureState.isIrreducible_selectedRepresentation

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: norm_selectedVector, selected_vectorFunctional

Used by in this Project: exists_irreducible_pureAtomicShellModel, selected_commonFixedProjection_eq_zero

[Read exact source](#)

Level 6

exists_irreducible_pureAtomicShellModel

MathlibAnnex.CStarAlgebra.AtomicConstruction.exists_irreducible_pureAtomicShellModel

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: exists_irreducible_atomicShellModel, instNontrivial, isIrreducible_selectedRepresentation, no_unitaryIntertwiner_selectedRepresentation, selectedEmbedding

Used by in this Project: exists_completedAtomicShellModel

[Read exact source](#)

embed_trans

MathlibAnnex.CStarAlgebra.CAR.embed_trans

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: embed_apply

Used by in this Project: embedDirectedSystem

[Read exact source](#)

isPureState_rootFunctional

MathlibAnnex.CStarAlgebra.CAR.isPureState_rootFunctional

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: eq_rootFunctional_of_apply_rootProjection_eq_one, rootFunctional_mem_stateSpace, IsPureState

Used by in this Project: isPureState_rootState

[Read exact source](#)

isometry_stage

MathlibAnnex.CStarAlgebra.CAR.isometry_stage

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isometry_step

Used by in this Project: PreCAR

[Read exact source](#)

stageTrace_embed

MathlibAnnex.CStarAlgebra.CAR.stageTrace_embed

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: embed_refl, embed_succ, stageTrace_step

Used by in this Project: algTraceLinear

[Read exact source](#)

Level 7

PreCAR

MathlibAnnex.CStarAlgebra.CAR.PreCAR

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isometry_stage

Used by in this Project: preToAlg, toPreCAR

[Read exact source](#)

embedDirectedSystem

MathlibAnnex.CStarAlgebra.CAR.embedDirectedSystem

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: embed_trans

Used by in this Project: AlgCAR

[Read exact source](#)

Level 8

AlgCAR

MathlibAnnex.CStarAlgebra.CAR.AlgCAR

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: embedDirectedSystem

Used by in this Project: algRootLinear, algStageHom, algToPre, algTraceLinear, preToAlg

[Read exact source](#)

toPreCAR

MathlibAnnex.CStarAlgebra.CAR.toPreCAR

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: PreCAR

Used by in this Project: isometry_toPreCAR, toPreCAR_step

[Read exact source](#)

Level 9

algRootLinear

MathlibAnnex.CStarAlgebra.CAR.algRootLinear

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: AlgCAR, rootFunctional_embed

Used by in this Project: preRootLinear

[Read exact source](#)

algStageHom

MathlibAnnex.CStarAlgebra.CAR.algStageHom

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: AlgCAR

Used by in this Project: stageHom

[Read exact source](#)

algTraceLinear

MathlibAnnex.CStarAlgebra.CAR.algTraceLinear

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: AlgCAR, stageTrace_embed

Used by in this Project: preTraceLinear

[Read exact source](#)

isometry_toPreCAR

MathlibAnnex.CStarAlgebra.CAR.isometry_toPreCAR

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: toPreCAR

Used by in this Project: norm_stageHom, stageHom_injective

[Read exact source](#)

preToAlg

MathlibAnnex.CStarAlgebra.CAR.preToAlg

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: AlgCAR, PreCAR

Used by in this Project: algToPre_preToAlg, preToAlg_algToPre

[Read exact source](#)

toPreCAR_step

MathlibAnnex.CStarAlgebra.CAR.toPreCAR_step

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: toPreCAR

Used by in this Project: toPreCAR_embed

[Read exact source](#)

Level 10

toPreCAR_embed

MathlibAnnex.CStarAlgebra.CAR.toPreCAR_embed

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: embed_refl, embed_succ, toPreCAR_step

Used by in this Project: algToPre

[Read exact source](#)

Level 11

algToPre

MathlibAnnex.CStarAlgebra.CAR.algToPre

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: AlgCAR, toPreCAR_embed

Used by in this Project: algToPre_preToAlg, preToAlg_algToPre

[Read exact source](#)

Level 12

algToPre_preToAlg

MathlibAnnex.CStarAlgebra.CAR.algToPre_preToAlg

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: algToPre, preToAlg

Used by in this Project: preAlgEquiv

[Read exact source](#)

preToAlg_algToPre

MathlibAnnex.CStarAlgebra.CAR.preToAlg_algToPre

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: algToPre, preToAlg

Used by in this Project: preAlgEquiv

[Read exact source](#)

Level 13

preAlgEquiv

MathlibAnnex.CStarAlgebra.CAR.preAlgEquiv

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: algToPre_preToAlg, preToAlg_algToPre

Used by in this Project: preRing

[Read exact source](#)

Level 14

preRing

MathlibAnnex.CStarAlgebra.CAR.preRing

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preAlgEquiv

Used by in this Project: preAlgebra, preNorm, preStarRing

[Read exact source](#)

Level 15

preAlgebra

MathlibAnnex.CStarAlgebra.CAR.preAlgebra

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preRing

Used by in this Project: preStarAlgEquiv, preStarModule

[Read exact source](#)

preNorm

MathlibAnnex.CStarAlgebra.CAR.preNorm

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preRing

Used by in this Project: norm_stageHom

[Read exact source](#)

preStarRing

MathlibAnnex.CStarAlgebra.CAR.preStarRing

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preRing

Used by in this Project: preStarAlgEquiv, preStarModule

[Read exact source](#)

Level 16

preStarAlgEquiv

MathlibAnnex.CStarAlgebra.CAR.preStarAlgEquiv

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preAlgebra, preStarRing

Used by in this Project: stageHom

[Read exact source](#)

preStarModule

MathlibAnnex.CStarAlgebra.CAR.preStarModule

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preAlgebra, preStarRing

Used by in this Project: limitStarModule

[Read exact source](#)

Level 17

stageHom

MathlibAnnex.CStarAlgebra.CAR.stageHom

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: algStageHom, preStarAlgEquiv

Used by in this Project: exists_common_stage, stageHom_apply

[Read exact source](#)

Level 18

exists_common_stage

MathlibAnnex.CStarAlgebra.CAR.exists_common_stage

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: stageHom

Used by in this Project: preNormedAddCommGroup

[Read exact source](#)

stageHom_apply

MathlibAnnex.CStarAlgebra.CAR.stageHom_apply

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: stageHom

Used by in this Project: norm_stageHom, stageHom_injective

[Read exact source](#)

Level 19

norm_stageHom

MathlibAnnex.CStarAlgebra.CAR.norm_stageHom

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isometry_toPreCAR, preNorm, stageHom_apply

Used by in this Project: preNormedAddCommGroup

[Read exact source](#)

stageHom_injective

MathlibAnnex.CStarAlgebra.CAR.stageHom_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isometry_toPreCAR, stageHom_apply

Used by in this Project: preNontrivial

[Read exact source](#)

Level 20

preNontrivial

MathlibAnnex.CStarAlgebra.CAR.preNontrivial

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: stageHom_injective, stageNontrivial

Used by in this Project: limitNontrivial

[Read exact source](#)

preNormedAddCommGroup

MathlibAnnex.CStarAlgebra.CAR.preNormedAddCommGroup

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: exists_common_stage, norm_stageHom

Used by in this Project: preNormedRing

[Read exact source](#)

Level 21

preNormedRing

MathlibAnnex.CStarAlgebra.CAR.preNormedRing

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preNormedAddCommGroup

Used by in this Project: Limit, dense_stageUnion, preCStarRing, preNormedSpace, preSeparableSpace

[Read exact source](#)

Level 22

Limit

MathlibAnnex.CStarAlgebra.CAR.Limit

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preNormedRing

Used by in this Project: limitNontrivial, limitNormedAlgebra, limitSeparableSpace, limitStar, rootState, trace

[Read exact source](#)

dense_stageUnion

MathlibAnnex.CStarAlgebra.CAR.dense_stageUnion

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preNormedRing

Used by in this Project: dense_stageRange

[Read exact source](#)

preCStarRing

MathlibAnnex.CStarAlgebra.CAR.preCStarRing

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preNormedRing

Used by in this Project: star_coe

[Read exact source](#)

preNormedSpace

MathlibAnnex.CStarAlgebra.CAR.preNormedSpace

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preNormedRing

Used by in this Project: AlternatingState, HasInnerIntertwiningSequence, innerAt, limitNormedAlgebra, limitStarModule, preNormedAlgebra, preRootLinear, preTraceLinear, toLimit

[Read exact source](#)

preSeparableSpace

MathlibAnnex.CStarAlgebra.CAR.preSeparableSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: preNormedRing, stageSeparableSpace

Used by in this Project: limitSeparableSpace

[Read exact source](#)

Level 23

limitNontrivial

MathlibAnnex.CStarAlgebra.CAR.limitNontrivial

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: Limit, preNontrivial

Used by in this Project: limitIsSimpleRing, norm_rowAverageLinear_le

[Read exact source](#)

limitNormedAlgebra

MathlibAnnex.CStarAlgebra.CAR.limitNormedAlgebra

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: Limit, preNormedSpace

Used by in this Project: cornerExponential, limitCStarAlgebra

[Read exact source](#)

limitSeparableSpace

MathlibAnnex.CStarAlgebra.CAR.limitSeparableSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: Limit, preSeparableSpace

Used by in this Project: separableSpace_traceHilbertSpace, transportDense

[Read exact source](#)

limitStar

MathlibAnnex.CStarAlgebra.CAR.limitStar

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: Limit

Used by in this Project: AlternatingState, continuous_limit_star, star_coe

[Read exact source](#)

preNormedAlgebra

MathlibAnnex.CStarAlgebra.CAR.preNormedAlgebra

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preNormedSpace

Used by in this Project: liftedCornerExponentialPath, rootState_nonneg, trace_nonneg

[Read exact source](#)

preRootLinear

MathlibAnnex.CStarAlgebra.CAR.preRootLinear

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: algRootLinear, preNormedSpace

Used by in this Project: preRootLinear_stage

[Read exact source](#)

preTraceLinear

MathlibAnnex.CStarAlgebra.CAR.preTraceLinear

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: algTraceLinear, preNormedSpace

Used by in this Project: preTraceLinear_stageHom

[Read exact source](#)

Level 24

AlternatingState

MathlibAnnex.CStarAlgebra.CAR.AlternatingState

Exact source-authored inductive in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitStar, preNormedSpace

Used by in this Project: AlternatingTransition, nonempty_initialState

[Read exact source](#)

continuous_limit_star

MathlibAnnex.CStarAlgebra.CAR.continuous_limit_star

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitStar

Used by in this Project: limitContinuousStar, limitStarModule, rootState_star_mul_self_nonneg, trace_star_mul_self_nonneg

[Read exact source](#)

preRootLinear_stage

MathlibAnnex.CStarAlgebra.CAR.preRootLinear_stage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preRootLinear

Used by in this Project: norm_preRootLinear_le

[Read exact source](#)

preTraceLinear_stageHom

MathlibAnnex.CStarAlgebra.CAR.preTraceLinear_stageHom

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: preTraceLinear

Used by in this Project: norm_preTraceLinear_le

[Read exact source](#)

star_coe

MathlibAnnex.CStarAlgebra.CAR.star_coe

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitStar, preCStarRing

Used by in this Project: limitStarModule, limitStarRing, rootState_star_mul_self_nonneg, toLimit, trace_star_mul_self_nonneg

[Read exact source](#)

transportDense

MathlibAnnex.CStarAlgebra.CAR.transportDense

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitSeparableSpace

Used by in this Project: densePrefix, denseRange_transportDense

[Read exact source](#)

Level 25

AlternatingTransition

MathlibAnnex.CStarAlgebra.CAR.AlternatingTransition

Exact source-authored inductive in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: AlternatingState

Used by in this Project: nonempty_transition

[Read exact source](#)

densePrefix

MathlibAnnex.CStarAlgebra.CAR.densePrefix

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: transportDense

Used by in this Project: mem_densePrefix, protectedPrefix

[Read exact source](#)

denseRange_transportDense

MathlibAnnex.CStarAlgebra.CAR.denseRange_transportDense

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: transportDense

Used by in this Project: leftAutomorphisms_cauchy, leftAutomorphisms_symm_cauchy, rightAutomorphisms_cauchy, rightAutomorphisms_symm_cauchy, tendsto_outputAutomorphisms_state

[Read exact source](#)

limitContinuousStar

MathlibAnnex.CStarAlgebra.CAR.limitContinuousStar

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: continuous_limit_star

Used by in this Project: limitStarRing

[Read exact source](#)

limitStarModule

MathlibAnnex.CStarAlgebra.CAR.limitStarModule

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: continuous_limit_star, preNormedSpace, preStarModule, star_coe

Used by in this Project: cornerExponential, limitCStarAlgebra

[Read exact source](#)

norm_preRootLinear_le

MathlibAnnex.CStarAlgebra.CAR.norm_preRootLinear_le

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preRootLinear_stage

Used by in this Project: preRootFunctional

[Read exact source](#)

norm_preTraceLinear_le

MathlibAnnex.CStarAlgebra.CAR.norm_preTraceLinear_le

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: norm_stageTrace_le, preTraceLinear_stageHom

Used by in this Project: preTrace

[Read exact source](#)

toLimit

MathlibAnnex.CStarAlgebra.CAR.toLimit

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preNormedSpace, star_coe

Used by in this Project: ofStage

[Read exact source](#)

Level 26

limitStarRing

MathlibAnnex.CStarAlgebra.CAR.limitStarRing

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitContinuousStar, star_coe

Used by in this Project: HasInnerIntertwiningSequence, cornerExponential, innerAt, limitCStarRing, star_cornerLift

[Read exact source](#)

mem_densePrefix

MathlibAnnex.CStarAlgebra.CAR.mem_densePrefix

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: densePrefix

Used by in this Project: mem_protectedPrefix, mem_symm_protectedPrefix, nonempty_transition

[Read exact source](#)

ofStage

MathlibAnnex.CStarAlgebra.CAR.ofStage

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: toLimit

Used by in this Project: dense_stageRange, limitMatrixUnit, ofStage_apply, ofStage_embed, ofStage_step, rootFlag

[Read exact source](#)

preRootFunctional

MathlibAnnex.CStarAlgebra.CAR.preRootFunctional

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: norm_preRootLinear_le

Used by in this Project: preRootFunctional_stage, rootState

[Read exact source](#)

preTrace

MathlibAnnex.CStarAlgebra.CAR.preTrace

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: norm_preTraceLinear_le

Used by in this Project: preTrace_stageHom, trace

[Read exact source](#)

Level 27

HasInnerIntertwiningSequence

MathlibAnnex.CStarAlgebra.CAR.HasInnerIntertwiningSequence

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitStarRing, preNormedSpace

Used by in this Project: hasInnerIntertwiningSequence_vectorFunctional, homogeneity_of_innerIntertwiningSequences

[Read exact source](#)

dense_stageRange

MathlibAnnex.CStarAlgebra.CAR.dense_stageRange

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: dense_stageUnion, ofStage

Used by in this Project: eq_rootState_of_restrict, eq_trace_of_apply_one_of_mul_comm, exists_stage_approx, norm_rootRepresentation, tendsto_norm_compressionError

[Read exact source](#)

innerAt

MathlibAnnex.CStarAlgebra.CAR.innerAt

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitStarRing, preNormedSpace

Used by in this Project: protectedPrefix

[Read exact source](#)

limitCStarRing

MathlibAnnex.CStarAlgebra.CAR.limitCStarRing

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitStarRing

Used by in this Project: limitCStarAlgebra

[Read exact source](#)

limitMatrixUnit

MathlibAnnex.CStarAlgebra.CAR.limitMatrixUnit

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: matrixUnit, ofStage

Used by in this Project: IsRootCornerUnitary, cornerExponential, cornerLift, limitMatrixUnit_mul, not_finiteDimensional_range_rootCorner, ofStage_eq_sum_smul_limitMatrixUnit, reconstructedStageVector, rootCornerSubspace, rowAverageLinear, stageTests, star_limitMatrixUnit, sum_limitMatrixUnit_diag

[Read exact source](#)

ofStage_apply

MathlibAnnex.CStarAlgebra.CAR.ofStage_apply

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: ofStage

Used by in this Project: norm_ofStage, rootState_stage, trace_ofStage

[Read exact source](#)

ofStage_embed

MathlibAnnex.CStarAlgebra.CAR.ofStage_embed

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: ofStage

Used by in this Project: exists_common_stage_approx, rootFlag_mul_ofStage_mul

[Read exact source](#)

ofStage_step

MathlibAnnex.CStarAlgebra.CAR.ofStage_step

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: ofStage

Used by in this Project: rootFlag_succ_le

[Read exact source](#)

preRootFunctional_stage

MathlibAnnex.CStarAlgebra.CAR.preRootFunctional_stage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preRootFunctional

Used by in this Project: preRootFunctional_star_mul_self_nonneg, rootState_stage

[Read exact source](#)

preTrace_stageHom

MathlibAnnex.CStarAlgebra.CAR.preTrace_stageHom

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: preTrace

Used by in this Project: trace_mul_comm, trace_ofStage, trace_star_mul_self_nonneg

[Read exact source](#)

rootFlag

MathlibAnnex.CStarAlgebra.CAR.rootFlag

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: ofStage, rootProjection

Used by in this Project: compressionError, isStarProjection_rootFlag, representedRootFlag, rootFlag_mul_ofStage_mul, rootFlag_zero, rootShell, rootState_rootFlag, trace_rootFlag, transportedFlag

[Read exact source](#)

rootState

MathlibAnnex.CStarAlgebra.CAR.rootState

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: Limit, preRootFunctional

Used by in this Project: compressionError, rootState_coe

[Read exact source](#)

trace

MathlibAnnex.CStarAlgebra.CAR.trace

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: Limit, preTrace

Used by in this Project: trace_coe

[Read exact source](#)

Level 28

IsRootCornerUnitary

MathlibAnnex.CStarAlgebra.CAR.IsRootCornerUnitary

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit

Used by in this Project: cornerLift_mem_unitary, isRootCornerUnitary_cornerExponential

[Read exact source](#)

compressionError

MathlibAnnex.CStarAlgebra.CAR.compressionError

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootFlag, rootState

Used by in this Project: compressionError_ofStage, compressionError_sub, norm_compressionError_le

[Read exact source](#)

cornerExponential

MathlibAnnex.CStarAlgebra.CAR.cornerExponential

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit, limitNormedAlgebra, limitStarModule, limitStarRing

Used by in this Project: exists_rootCornerSupported_exponential_eq_on, isRootCornerUnitary_cornerExponential

[Read exact source](#)

cornerLift

MathlibAnnex.CStarAlgebra.CAR.cornerLift

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit

Used by in this Project: cornerLift_eq_rowAverageLinear, representation_cornerLift_apply, star_cornerLift

[Read exact source](#)

isStarProjection_rootFlag

MathlibAnnex.CStarAlgebra.CAR.isStarProjection_rootFlag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isStarProjection_rootProjection, rootFlag

Used by in this Project: instHasOrthogonalProjectionRepresentedRootFlag, isStarProjection_transportedFlag, norm_compressionError_le, rootFlag_succ_le, tendsto_rootFlag_orbit_zero

[Read exact source](#)

limitCStarAlgebra

MathlibAnnex.CStarAlgebra.CAR.limitCStarAlgebra

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitCStarRing, limitNormedAlgebra, limitStarModule

Used by in this Project: exists_rootCornerSupported_selfAdjoint_norm_le_two_mul_and_eq_on, exists_stage_approx, limitPartialOrder, norm_compressionError_le, norm_trace_le, ofStage_injective, restrictState, trace_mul_comm

[Read exact source](#)

limitMatrixUnit_mul

MathlibAnnex.CStarAlgebra.CAR.limitMatrixUnit_mul

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitMatrixUnit, matrixUnit_mul_of_ne, matrixUnit_mul_same

Used by in this Project: apply_limitMatrixUnit_eq_trace_of_apply_one_of_mul_comm, cornerLift_mem_unitary, isRootCornerUnitary_cornerExponential, isStarProjection_limitMatrixUnit_zero_zero, limitMatrixUnit_commute_rowAverage, representation_matrixUnit_reconstructedStageVector, rowAverageLinear_one, row_isometry_sum

[Read exact source](#)

norm_ofStage

MathlibAnnex.CStarAlgebra.CAR.norm_ofStage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: ofStage_apply

Used by in this Project: norm_rootRepresentation_stage, ofStage_injective, restrictState

[Read exact source](#)

preRootFunctional_star_mul_self_nonneg

MathlibAnnex.CStarAlgebra.CAR.preRootFunctional_star_mul_self_nonneg

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: preRootFunctional_stage, rootLinear_nonneg

Used by in this Project: rootState_star_mul_self_nonneg

[Read exact source](#)

protectedPrefix

MathlibAnnex.CStarAlgebra.CAR.protectedPrefix

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: densePrefix, innerAt

Used by in this Project: mem_protectedPrefix, mem_symm_protectedPrefix, nonempty_initialState, nonempty_transition

[Read exact source](#)

reconstructedStageVector

MathlibAnnex.CStarAlgebra.CAR.reconstructedStageVector

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit

Used by in this Project: representation_matrixUnit_reconstructedStageVector

[Read exact source](#)

rootCornerSubspace

MathlibAnnex.CStarAlgebra.CAR.rootCornerSubspace

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit

Used by in this Project: exists_rootCornerSupported_exponential_apply_eq_involution

[Read exact source](#)

rootFlag_zero

MathlibAnnex.CStarAlgebra.CAR.rootFlag_zero

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootFlag

Used by in this Project: transportedFlag_zero

[Read exact source](#)

rootShell

MathlibAnnex.CStarAlgebra.CAR.rootShell

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootFlag

Used by in this Project: isStarProjection_rootShell, representativeLink_final, representativeLink_initial, representativeShellData_root_link

[Read exact source](#)

rootState_coe

MathlibAnnex.CStarAlgebra.CAR.rootState_coe

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootState

Used by in this Project: rootState_stage, rootState_star_mul_self_nonneg

[Read exact source](#)

rowAverageLinear

MathlibAnnex.CStarAlgebra.CAR.rowAverageLinear

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit

Used by in this Project: cornerLift_eq_rowAverageLinear, rowAverageLinear_apply, rowAverageLinear_one

[Read exact source](#)

stageTests

MathlibAnnex.CStarAlgebra.CAR.stageTests

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit

Used by in this Project: mem_stageTests

[Read exact source](#)

star_limitMatrixUnit

MathlibAnnex.CStarAlgebra.CAR.star_limitMatrixUnit

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit, star_matrixUnit

Used by in this Project: isRootCornerUnitary_cornerExponential, isStarProjection_limitMatrixUnit_zero_zero, rowAverageLinear_nonneg, row_isometry_sum, star_cornerLift, vectorFunctional_reconstructedStageVector_matrixUnit

[Read exact source](#)

sum_limitMatrixUnit_diag

MathlibAnnex.CStarAlgebra.CAR.sum_limitMatrixUnit_diag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitMatrixUnit, sum_matrixUnit_diag

Used by in this Project: apply_limitMatrixUnit_eq_trace_of_apply_one_of_mul_comm, cornerLift_mem_unitary, rowAverageLinear_one, row_isometry_sum

[Read exact source](#)

trace_coe

MathlibAnnex.CStarAlgebra.CAR.trace_coe

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: trace

Used by in this Project: norm_trace_le, trace_mul_comm, trace_ofStage, trace_star_mul_self_nonneg

[Read exact source](#)

Level 29

compressionError_sub

MathlibAnnex.CStarAlgebra.CAR.compressionError_sub

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: compressionError

Used by in this Project: tendsto_norm_compressionError

[Read exact source](#)

cornerLift_eq_rowAverageLinear

MathlibAnnex.CStarAlgebra.CAR.cornerLift_eq_rowAverageLinear

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: cornerLift, rowAverageLinear

Used by in this Project: ofStage_commute_cornerLift

[Read exact source](#)

exists_stage_approx

MathlibAnnex.CStarAlgebra.CAR.exists_stage_approx

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: dense_stageRange, limitCStarAlgebra

Used by in this Project: exists_common_stage_approx

[Read exact source](#)

isRootCornerUnitary_cornerExponential

MathlibAnnex.CStarAlgebra.CAR.isRootCornerUnitary_cornerExponential

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: IsRootCornerUnitary, cornerExponential, limitMatrixUnit_mul, star_limitMatrixUnit

Used by in this Project: liftedCornerExponential

[Read exact source](#)

isStarProjection_limitMatrixUnit_zero_zero

MathlibAnnex.CStarAlgebra.CAR.isStarProjection_limitMatrixUnit_zero_zero

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit_mul, star_limitMatrixUnit

Used by in this Project: exists_rootCornerFamily_with_gram, exists_rootCornerSupported_selfAdjoint_norm_le_two_mul_and_eq_on

[Read exact source](#)

limitPartialOrder

MathlibAnnex.CStarAlgebra.CAR.limitPartialOrder

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitCStarAlgebra

Used by in this Project: limitStarOrderedRing

[Read exact source](#)

mem_protectedPrefix

MathlibAnnex.CStarAlgebra.CAR.mem_protectedPrefix

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: mem_densePrefix, protectedPrefix

Used by in this Project: leftAutomorphisms_step, rightAutomorphisms_step

[Read exact source](#)

mem_stageTests

MathlibAnnex.CStarAlgebra.CAR.mem_stageTests

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: stageTests

Used by in this Project: nonempty_initialState, nonempty_transition

[Read exact source](#)

mem_symm_protectedPrefix

MathlibAnnex.CStarAlgebra.CAR.mem_symm_protectedPrefix

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: mem_densePrefix, protectedPrefix

Used by in this Project: leftAutomorphisms_symm_step, rightAutomorphisms_symm_step

[Read exact source](#)

norm_compressionError_le

MathlibAnnex.CStarAlgebra.CAR.norm_compressionError_le

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: compressionError, isStarProjection_rootFlag, limitCStarAlgebra

Used by in this Project: tendsto_norm_compressionError

[Read exact source](#)

norm_trace_le

MathlibAnnex.CStarAlgebra.CAR.norm_trace_le

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: limitCStarAlgebra, trace_coe

Used by in this Project: exists_state_extension_trace

[Read exact source](#)

ofStage_injective

MathlibAnnex.CStarAlgebra.CAR.ofStage_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitCStarAlgebra, norm_ofStage

Used by in this Project: not_finiteDimensional

[Read exact source](#)

representation_cornerLift_apply

MathlibAnnex.CStarAlgebra.CAR.representation_cornerLift_apply

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: cornerLift

Used by in this Project: representation_liftedCornerExponential_apply_of_root

[Read exact source](#)

representation_matrixUnit_reconstructedStageVector

MathlibAnnex.CStarAlgebra.CAR.representation_matrixUnit_reconstructedStageVector

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit_mul, reconstructedStageVector

Used by in this Project: vectorFunctional_reconstructedStageVector_matrixUnit

[Read exact source](#)

restrictState

MathlibAnnex.CStarAlgebra.CAR.restrictState

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitCStarAlgebra, norm_ofStage

Used by in this Project: eq_rootState_of_restrict, restrictState_apply

[Read exact source](#)

rootState_stage

MathlibAnnex.CStarAlgebra.CAR.rootState_stage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: ofStage_apply, preRootFunctional_stage, rootState_coe

Used by in this Project: eq_rootState_of_restrict, rootFlag_mul_ofStage_mul, rootState_one, rootState_rootFlag

[Read exact source](#)

rootState_star_mul_self_nonneg

MathlibAnnex.CStarAlgebra.CAR.rootState_star_mul_self_nonneg

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: continuous_limit_star, preRootFunctional_star_mul_self_nonneg, rootState_coe, star_coe

Used by in this Project: rootState_nonneg

[Read exact source](#)

rowAverageLinear_apply

MathlibAnnex.CStarAlgebra.CAR.rowAverageLinear_apply

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: rowAverageLinear

Used by in this Project: limitMatrixUnit_commute_rowAverage, rowAverageLinear_nonneg

[Read exact source](#)

rowAverageLinear_one

MathlibAnnex.CStarAlgebra.CAR.rowAverageLinear_one

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit_mul, rowAverageLinear, sum_limitMatrixUnit_diag

Used by in this Project: norm_rowAverageLinear_le

[Read exact source](#)

row_isometry_sum

MathlibAnnex.CStarAlgebra.CAR.row_isometry_sum

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit_mul, star_limitMatrixUnit, sum_limitMatrixUnit_diag

Used by in this Project: sum_norm_sq_map_limitMatrixUnit_star

[Read exact source](#)

star_cornerLift

MathlibAnnex.CStarAlgebra.CAR.star_cornerLift

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: cornerLift, limitStarRing, star_limitMatrixUnit

Used by in this Project: cornerLift_mem_unitary

[Read exact source](#)

trace_mul_comm

MathlibAnnex.CStarAlgebra.CAR.trace_mul_comm

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: limitCStarAlgebra, preTrace_stageHom, stageTrace_mul_comm, trace_coe

Used by in this Project: apply_limitMatrixUnit_eq_trace_of_apply_one_of_mul_comm, tendsto_rootFlag_orbit_zero, trace_transportedFlag_eq_trace_rootFlag

[Read exact source](#)

trace_ofStage

MathlibAnnex.CStarAlgebra.CAR.trace_ofStage

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: ofStage_apply, preTrace_stageHom, trace_coe

Used by in this Project: trace_one, trace_rootFlag

[Read exact source](#)

trace_star_mul_self_nonneg

MathlibAnnex.CStarAlgebra.CAR.trace_star_mul_self_nonneg

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: continuous_limit_star, preTrace_stageHom, stageTrace_star_mul_self_nonneg, star_coe, trace_coe

Used by in this Project: trace_nonneg

[Read exact source](#)

Level 30

cornerLift_mem_unitary

MathlibAnnex.CStarAlgebra.CAR.cornerLift_mem_unitary

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: IsRootCornerUnitary, limitMatrixUnit_mul, star_cornerLift, sum_limitMatrixUnit_diag

Used by in this Project: liftedCornerExponential

[Read exact source](#)

eq_rootState_of_restrict

MathlibAnnex.CStarAlgebra.CAR.eq_rootState_of_restrict

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: dense_stageRange, restrictState, rootState_stage

Used by in this Project: isPureState_rootState

[Read exact source](#)

exists_common_stage_approx

MathlibAnnex.CStarAlgebra.CAR.exists_common_stage_approx

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: exists_stage_approx, ofStage_embed

Used by in this Project: exists_stageTests_exact_unitary_path_apply_eq_and_conjugate_sub_norm_lt, exists_unitary_crossRepresentation_path_approx

[Read exact source](#)

exists_rootCornerSupported_selfAdjoint_norm_le_two_mul_and_eq_on

MathlibAnnex.CStarAlgebra.CAR.exists_rootCornerSupported_selfAdjoint_norm_le_two_mul_and_eq_on

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: isStarProjection_limitMatrixUnit_zero_zero, limitCStarAlgebra

Used by in this Project: exists_rootCornerSupported_exponential_eq_on

[Read exact source](#)

limitMatrixUnit_commute_rowAverage

MathlibAnnex.CStarAlgebra.CAR.limitMatrixUnit_commute_rowAverage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit_mul, rowAverageLinear_apply

Used by in this Project: ofStage_commute_rowAverage

[Read exact source](#)

limitStarOrderedRing

MathlibAnnex.CStarAlgebra.CAR.limitStarOrderedRing

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitPartialOrder

Used by in this Project: PureStateHomogeneity, RepresentativeShellData, ofStage_eq_sum_smul_limitMatrixUnit, restrictState_mem_stateSpace, rootFlag_mul_ofStage_mul, rootFlag_succ_le, rootState_nonneg, rowAverageLinear_nonneg, sum_norm_sq_map_limitMatrixUnit_star, trace_nonneg, vectorFunctional_reconstructedStageVector_matrixUnit

[Read exact source](#)

not_finiteDimensional

MathlibAnnex.CStarAlgebra.CAR.not_finiteDimensional

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: finrank_stage, ofStage_injective

Used by in this Project: eq_zero_of_isCompactOperator_image, not_finiteDimensional_shellFamilyTarget

[Read exact source](#)

restrictState_apply

MathlibAnnex.CStarAlgebra.CAR.restrictState_apply

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: restrictState

Used by in this Project: restrictState_mem_stateSpace

[Read exact source](#)

rootState_one

MathlibAnnex.CStarAlgebra.CAR.rootState_one

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootPositiveFunctional_one, rootState_stage

Used by in this Project: rootPositiveState_one, rootState_mem_stateSpace

[Read exact source](#)

rootState_rootFlag

MathlibAnnex.CStarAlgebra.CAR.rootState_rootFlag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootFlag, rootFunctional_apply, rootState_stage

Used by in this Project: exists_selectedAtomicCyclicIsometry, selectedVector_fixed_transportFlag

[Read exact source](#)

trace_one

MathlibAnnex.CStarAlgebra.CAR.trace_one

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: stageTrace_one, trace_ofStage

Used by in this Project: apply_limitMatrixUnit_eq_trace_of_apply_one_of_mul_comm, exists_state_extension_trace, tracePositive_one

[Read exact source](#)

trace_rootFlag

MathlibAnnex.CStarAlgebra.CAR.trace_rootFlag

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: rootFlag, stageTrace_rootProjection, trace_ofStage

Used by in this Project: tendsto_rootFlag_orbit_zero, trace_transportFlag

[Read exact source](#)

Level 31

PureStateHomogeneity

MathlibAnnex.CStarAlgebra.CAR.PureStateHomogeneity

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitStarOrderedRing, IsPureState

Used by in this Project: homogeneity_of_innerIntertwiningSequences

[Read exact source](#)

RepresentativeShellData

MathlibAnnex.CStarAlgebra.CAR.RepresentativeShellData

Exact source-authored inductive in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitStarOrderedRing, IsPureState

Used by in this Project: representativeShellData, representativeShellDataOfHomogeneity

[Read exact source](#)

apply_limitMatrixUnit_eq_trace_of_apply_one_of_mul_comm

MathlibAnnex.CStarAlgebra.CAR.apply_limitMatrixUnit_eq_trace_of_apply_one_of_mul_comm

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: limitMatrixUnit_mul, sum_limitMatrixUnit_diag, trace_mul_comm, trace_one

Used by in this Project: apply_ofStage_eq_trace_of_apply_one_of_mul_comm

[Read exact source](#)

exists_rootCornerSupported_exponential_eq_on

MathlibAnnex.CStarAlgebra.CAR.exists_rootCornerSupported_exponential_eq_on

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: cornerExponential,
exists_rootCornerSupported_selfAdjoint_norm_le_two_mul_and_eq_on

Used by in this Project: exists_rootCornerSupported_exponential_apply_eq_involution

[Read exact source](#)

liftedCornerExponential

MathlibAnnex.CStarAlgebra.CAR.liftedCornerExponential

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: cornerLift_mem_unitary, isRootCornerUnitary_cornerExponential

Used by in this Project: liftedCornerExponentialPath, liftedCornerExponential_commute_stage,
representation_liftedCornerExponential_apply_of_root

[Read exact source](#)

ofStage_eq_sum_smul_limitMatrixUnit

MathlibAnnex.CStarAlgebra.CAR.ofStage_eq_sum_smul_limitMatrixUnit

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitMatrixUnit, limitStarOrderedRing, stage_eq_sum_smul_matrixUnit

Used by in this Project: apply_ofStage_eq_trace_of_apply_one_of_mul_comm, continuousLinearMap_eq_on_ofStage_of_eq_matrixUnit, ofStage_commute_rowAverage

[Read exact source](#)

restrictState_mem_stateSpace

MathlibAnnex.CStarAlgebra.CAR.restrictState_mem_stateSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitStarOrderedRing, restrictState_apply, stateSpace

Used by in this Project: isPureState_rootState

[Read exact source](#)

rootFlag_mul_ofStage_mul

MathlibAnnex.CStarAlgebra.CAR.rootFlag_mul_ofStage_mul

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitStarOrderedRing, ofStage_embed, rootFlag, rootProjection_mul_mul, rootState_stage

Used by in this Project: compressionError_ofStage

[Read exact source](#)

rootFlag_succ_le

MathlibAnnex.CStarAlgebra.CAR.rootFlag_succ_le

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isStarProjection_rootFlag, limitStarOrderedRing, ofStage_step, step_rootProjection_mul

Used by in this Project: antitone_rootFlag, isStarProjection_rootShell

[Read exact source](#)

rootState_nonneg

MathlibAnnex.CStarAlgebra.CAR.rootState_nonneg

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: limitStarOrderedRing, preNormedAlgebra, rootState_star_mul_self_nonneg

Used by in this Project: rootPositiveState, rootState_mem_stateSpace

[Read exact source](#)

rowAverageLinear_nonneg

MathlibAnnex.CStarAlgebra.CAR.rowAverageLinear_nonneg

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitStarOrderedRing, rowAverageLinear_apply, star_limitMatrixUnit

Used by in this Project: rowAveragePositive

[Read exact source](#)

sum_norm_sq_map_limitMatrixUnit_star

MathlibAnnex.CStarAlgebra.CAR.sum_norm_sq_map_limitMatrixUnit_star

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitStarOrderedRing, row_isometry_sum

Used by in this Project: exists_delta_stageCentral_unitary_path_apply_sub_norm_It

[Read exact source](#)

trace_nonneg

MathlibAnnex.CStarAlgebra.CAR.trace_nonneg

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: limitStarOrderedRing, preNormedAlgebra, trace_star_mul_self_nonneg

Used by in this Project: tracePositive

[Read exact source](#)

vectorFunctional_reconstructedStageVector_matrixUnit

MathlibAnnex.CStarAlgebra.CAR.vectorFunctional_reconstructedStageVector_matrixUnit

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitStarOrderedRing, representation_matrixUnit_reconstructedStageVector, star_limitMatrixUnit

Used by in this Project: reconstructedStageVector_vectorFunctional_eq_on_stage

[Read exact source](#)

Level 32

antitone_rootFlag

MathlibAnnex.CStarAlgebra.CAR.antitone_rootFlag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootFlag_succ_le

Used by in this Project: rootFlag_mul_of_le

[Read exact source](#)

apply_ofStage_eq_trace_of_apply_one_of_mul_comm

MathlibAnnex.CStarAlgebra.CAR.apply_ofStage_eq_trace_of_apply_one_of_mul_comm

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: apply_limitMatrixUnit_eq_trace_of_apply_one_of_mul_comm, ofStage_eq_sum_smul_limitMatrixUnit

Used by in this Project: eq_trace_of_apply_one_of_mul_comm

[Read exact source](#)

compressionError_ofStage

MathlibAnnex.CStarAlgebra.CAR.compressionError_ofStage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: compressionError, rootFlag_mul_ofStage_mul

Used by in this Project: tendsto_norm_compressionError

[Read exact source](#)

continuousLinearMap_eq_on_ofStage_of_eq_matrixUnit

MathlibAnnex.CStarAlgebra.CAR.continuousLinearMap_eq_on_ofStage_of_eq_matrixUnit

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: ofStage_eq_sum_smul_limitMatrixUnit

Used by in this Project: reconstructedStageVector_vectorFunctional_eq_on_stage

[Read exact source](#)

homogeneity_of_innerIntertwiningSequences

MathlibAnnex.CStarAlgebra.CAR.homogeneity_of_innerIntertwiningSequences

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: HasInnerIntertwiningSequence, PureStateHomogeneity

Used by in this Project: homogeneity

[Read exact source](#)

isStarProjection_rootShell

MathlibAnnex.CStarAlgebra.CAR.isStarProjection_rootShell

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: rootFlag_succ_le, rootShell

Used by in this Project: rootShell_mul_star_rootShell, star_rootShell_mul_rootShell

[Read exact source](#)

ofStage_commute_rowAverage

MathlibAnnex.CStarAlgebra.CAR.ofStage_commute_rowAverage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitMatrixUnit_commute_rowAverage, ofStage_eq_sum_smul_limitMatrixUnit

Used by in this Project: ofStage_commute_cornerLift

[Read exact source](#)

representation_liftedCornerExponential_apply_of_root

MathlibAnnex.CStarAlgebra.CAR.representation_liftedCornerExponential_apply_of_root

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: liftedCornerExponential, representation_cornerLift_apply

Used by in this Project: exists_liftedCornerExponential_apply_eq_involution

[Read exact source](#)

representativeShellData

MathlibAnnex.CStarAlgebra.CAR.representativeShellData

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: RepresentativeShellData, RepresentativeShellFamily

Used by in this Project: representativeLink_final, representativeShellData_root_alpha, representativeShellData_root_link, representedShellLink, transportedFlag

[Read exact source](#)

rootPositiveState

MathlibAnnex.CStarAlgebra.CAR.rootPositiveState

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootState_nonneg

Used by in this Project: norm_leftMulMapPreGNS_apply_le, rootPositiveState_one

[Read exact source](#)

rootState_mem_stateSpace

MathlibAnnex.CStarAlgebra.CAR.rootState_mem_stateSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootState_nonneg, rootState_one, stateSpace

Used by in this Project: isPureState_rootState

[Read exact source](#)

rowAveragePositive

MathlibAnnex.CStarAlgebra.CAR.rowAveragePositive

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: rowAverageLinear_nonneg

Used by in this Project: norm_rowAverageLinear_le

[Read exact source](#)

tracePositive

MathlibAnnex.CStarAlgebra.CAR.tracePositive

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: trace_nonneg

Used by in this Project: TraceHilbertSpace, tendsto_rootFlag_orbit_zero, tendsto_transportedFlag_orbit_zero, tracePositive_one

[Read exact source](#)

Level 33

TraceHilbertSpace

MathlibAnnex.CStarAlgebra.CAR.TraceHilbertSpace

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: tracePositive

Used by in this Project: SeparableCounterexampleHilbertSpace, traceRepresentation, traceVector

[Read exact source](#)

eq_trace_of_apply_one_of_mul_comm

MathlibAnnex.CStarAlgebra.CAR.eq_trace_of_apply_one_of_mul_comm

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: apply_ofStage_eq_trace_of_apply_one_of_mul_comm, dense_stageRange

Used by in this Project: apply_shellFamilySourceHom_eq_trace_of_apply_one_of_mul_comm

[Read exact source](#)

isPureState_rootState

MathlibAnnex.CStarAlgebra.CAR.isPureState_rootState

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: eq_rootState_of_restrict, isPureState_rootFunctional, restrictState_mem_stateSpace, rootState_mem_stateSpace

Used by in this Project: completedRootPureState

[Read exact source](#)

norm_leftMulMapPreGNS_apply_le

MathlibAnnex.CStarAlgebra.CAR.norm_leftMulMapPreGNS_apply_le

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootPositiveState

Used by in this Project: norm_rootRepresentation_le

[Read exact source](#)

norm_rowAverageLinear_le

MathlibAnnex.CStarAlgebra.CAR.norm_rowAverageLinear_le

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitNontrivial, rowAverageLinear_one, rowAveragePositive

Used by in this Project: rowAverage

[Read exact source](#)

ofStage_commute_cornerLift

MathlibAnnex.CStarAlgebra.CAR.ofStage_commute_cornerLift

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: cornerLift_eq_rowAverageLinear, ofStage_commute_rowAverage

Used by in this Project: liftedCornerExponential_commute_stage

[Read exact source](#)

reconstructedStageVector_vectorFunctional_eq_on_stage

MathlibAnnex.CStarAlgebra.CAR.reconstructedStageVector_vectorFunctional_eq_on_stage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: continuousLinearMap_eq_on_ofStage_of_eq_matrixUnit, vectorFunctional_reconstructedStageVector_matrixUnit

Used by in this Project: norm_reconstructedStageVector_eq_one

[Read exact source](#)

representativeLink_final

MathlibAnnex.CStarAlgebra.CAR.representativeLink_final

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: representativeShellData, rootShell

Used by in this Project: exists_completedAtomicShellModel, exists_targetShellReconstruction, trace_transportFlag_eq_trace_rootFlag

[Read exact source](#)

rootFlag_mul_of_le

MathlibAnnex.CStarAlgebra.CAR.rootFlag_mul_of_le

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: antitone_rootFlag

Used by in this Project: transportedFlag_mul_of_le

[Read exact source](#)

rootPositiveState_one

MathlibAnnex.CStarAlgebra.CAR.rootPositiveState_one

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootPositiveState, rootState_one

Used by in this Project: rootGNSNontrivial

[Read exact source](#)

rootShell_mul_star_rootShell

MathlibAnnex.CStarAlgebra.CAR.rootShell_mul_star_rootShell

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: isStarProjection_rootShell

Used by in this Project: rootShell_identity_family

[Read exact source](#)

star_rootShell_mul_rootShell

MathlibAnnex.CStarAlgebra.CAR.star_rootShell_mul_rootShell

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: isStarProjection_rootShell

Used by in this Project: rootShell_identity_family

[Read exact source](#)

tendsto_norm_compressionError

MathlibAnnex.CStarAlgebra.CAR.tendsto_norm_compressionError

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: compressionError_ofStage, compressionError_sub, dense_stageRange, norm_compressionError_le

Used by in this Project: exists_rootFlag_mem_of_ne_zero_mem, tendsto_norm_transported_compressionError

[Read exact source](#)

tendsto_rootFlag_orbit_zero

MathlibAnnex.CStarAlgebra.CAR.tendsto_rootFlag_orbit_zero

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: isStarProjection_rootFlag, tracePositive, trace_mul_comm, trace_rootFlag

Used by in this Project: exists_shell_sums_eq_on_cyclicSubspace

[Read exact source](#)

tracePositive_one

MathlibAnnex.CStarAlgebra.CAR.tracePositive_one

Exact source-authored theorem in the Naimark construction.

Route / section: separable-faithful

Immediate prerequisites in this Project: tracePositive, trace_one

Used by in this Project: norm_traceVector

[Read exact source](#)

transportedFlag

MathlibAnnex.CStarAlgebra.CAR.transportedFlag

Exact source-authored def in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: representativeShellData, rootFlag

Used by in this Project: isStarProjection_transportFlag, representativeLink_initial, representedGenerator_comp_sourceShell, representedInitialFlag, tendsto_representative_transport_compression, transportedFlag_mul_of_le, transportedFlag_root, transportedFlag_zero

[Read exact source](#)

Level 34

SeparableCounterexampleHilbertSpace

MathlibAnnex.CStarAlgebra.CAR.SeparableCounterexampleHilbertSpace

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: TraceHilbertSpace

Used by in this Project: separableCounterexampleRepresentation, separableSpace_separableCounterexampleHilbertSpace

[Read exact source](#)

completedRootPureState

MathlibAnnex.CStarAlgebra.CAR.completedRootPureState

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isPureState_rootState

Used by in this Project: exists_selectedCyclicUnitary, representativeShellData_root_alpha, representativeShellData_root_link, rootShell_identity_family, selectedAtomicRepresentation, selectedRootRepresentation_injective, selectedVector_fixed_transportFlag, tendsto_representative_transportFlag_compression

[Read exact source](#)

isStarProjection_transportFlag

MathlibAnnex.CStarAlgebra.CAR.isStarProjection_transportFlag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isStarProjection_rootFlag, transportFlag

Used by in this Project: exists_targetShellReconstruction, initialFixedProjection_eq_zero_on_otherCyclic, initialFixedProjection_maps_ownCyclic, instHasOrthogonalProjectionRepresentedInitialFlag, selectedVector_fixed_transportFlag, selected_commonFixedProjection_eq_zero, tendsto_transportFlag_orbit_zero

[Read exact source](#)

liftedCornerExponential_commute_stage

MathlibAnnex.CStarAlgebra.CAR.liftedCornerExponential_commute_stage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: liftedCornerExponential, ofStage_commute_cornerLift

Used by in this Project: liftedCornerExponentialPath_commute_stage

[Read exact source](#)

norm_reconstructedStageVector_eq_one

MathlibAnnex.CStarAlgebra.CAR.norm_reconstructedStageVector_eq_one

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: reconstructedStageVector_vectorFunctional_eq_on_stage

Used by in this Project: exists_unitVector_vectorFunctional_eq_on_stage

[Read exact source](#)

norm_rootRepresentation_le

MathlibAnnex.CStarAlgebra.CAR.norm_rootRepresentation_le

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: norm_leftMulMapPreGNS_apply_le

Used by in this Project: rootRepresentationCLM

[Read exact source](#)

representativeLink_initial

MathlibAnnex.CStarAlgebra.CAR.representativeLink_initial

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootShell, transportedFlag

Used by in this Project: exists_completedAtomicShellModel, exists_targetShellReconstruction, trace_transportedFlag_eq_trace_rootFlag

[Read exact source](#)

rootGNSNontrivial

MathlibAnnex.CStarAlgebra.CAR.rootGNSNontrivial

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootPositiveState_one

Used by in this Project: rootRepresentation_stage_injective

[Read exact source](#)

rowAverage

MathlibAnnex.CStarAlgebra.CAR.rowAverage

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: norm_rowAverageLinear_le

Used by in this Project: liftedCornerExponentialPath

[Read exact source](#)

tendsto_norm_transported_compressionError

MathlibAnnex.CStarAlgebra.CAR.tendsto_norm_transported_compressionError

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: tendsto_norm_compressionError

Used by in this Project: tendsto_transported_compressionError

[Read exact source](#)

traceRepresentation

MathlibAnnex.CStarAlgebra.CAR.traceRepresentation

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: TraceHilbertSpace

Used by in this Project: denseRange_traceRepresentation_orbit, inner_traceVector_traceRepresentation

[Read exact source](#)

traceVector

MathlibAnnex.CStarAlgebra.CAR.traceVector

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: TraceHilbertSpace

Used by in this Project: denseRange_traceRepresentation_orbit, inner_traceVector_traceRepresentation, norm_traceVector

[Read exact source](#)

transportedFlag_mul_of_le

MathlibAnnex.CStarAlgebra.CAR.transportedFlag_mul_of_le

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootFlag_mul_of_le, transportedFlag

Used by in this Project: exists_completedAtomicShellModel, exists_targetShellReconstruction

[Read exact source](#)

transportedFlag_zero

MathlibAnnex.CStarAlgebra.CAR.transportedFlag_zero

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootFlag_zero, transportedFlag

Used by in this Project: exists_completedAtomicShellModel, exists_targetShellReconstruction, trace_transportFlag_eq_trace_rootFlag

[Read exact source](#)

Level 35

denseRange_traceRepresentation_orbit

MathlibAnnex.CStarAlgebra.CAR.denseRange_traceRepresentation_orbit

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: traceRepresentation, traceVector

Used by in this Project: exists_linearIsometryEquiv_traceHilbertSpace, separableSpace_traceHilbertSpace

[Read exact source](#)

exists_selectedCyclicUnitary

MathlibAnnex.CStarAlgebra.CAR.exists_selectedCyclicUnitary

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: completedRootPureState, selected_vectorFunctional

Used by in this Project: isOrtho_cyclicSubspace_of_selectedStates

[Read exact source](#)

inner_traceVector_traceRepresentation

MathlibAnnex.CStarAlgebra.CAR.inner_traceVector_traceRepresentation

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: traceRepresentation, traceVector

Used by in this Project: exists_linearIsometryEquiv_traceHilbertSpace

[Read exact source](#)

liftedCornerExponentialPath

MathlibAnnex.CStarAlgebra.CAR.liftedCornerExponentialPath

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: liftedCornerExponential, preNormedAlgebra, rowAverage

Used by in this Project: liftedCornerExponentialPairPath, liftedCornerExponentialPath_commute_stage

[Read exact source](#)

norm_traceVector

MathlibAnnex.CStarAlgebra.CAR.norm_traceVector

Exact source-authored theorem in the Naimark construction.

Route / section: separable-faithful

Immediate prerequisites in this Project: tracePositive_one, traceVector

Used by in this Project: traceVector_ne_zero

[Read exact source](#)

representativeShellData_root_alpha

MathlibAnnex.CStarAlgebra.CAR.representativeShellData_root_alpha

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: completedRootPureState, representativeShellData

Used by in this Project: transportedFlag_root

[Read exact source](#)

representativeShellData_root_link

MathlibAnnex.CStarAlgebra.CAR.representativeShellData_root_link

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: completedRootPureState, representativeShellData, rootShell

Used by in this Project: exists_completedAtomicShellModel

[Read exact source](#)

rootRepresentationCLM

MathlibAnnex.CStarAlgebra.CAR.rootRepresentationCLM

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: norm_rootRepresentation_le

Used by in this Project: norm_rootRepresentation

[Read exact source](#)

rootRepresentation_stage_injective

MathlibAnnex.CStarAlgebra.CAR.rootRepresentation_stage_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootGNSNontrivial, stagelsSimpleRing

Used by in this Project: norm_rootRepresentation_stage

[Read exact source](#)

rootShell_identity_family

MathlibAnnex.CStarAlgebra.CAR.rootShell_identity_family

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: completedRootPureState, rootShell_mul_star_rootShell, star_rootShell_mul_rootShell

Used by in this Project: representativeShellDataOfHomogeneity

[Read exact source](#)

selectedAtomicRepresentation

MathlibAnnex.CStarAlgebra.CAR.selectedAtomicRepresentation

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: completedRootPureState, SelectedAtomicHilbert, selectedRepresentation

Used by in this Project: AtomicTarget, exists_selectedAtomicCyclicIsometry, representedInitialFlag, representedRootFlag, representedShellLink, selectedAtomicRepresentation_injective

[Read exact source](#)

selectedVector_fixed_transportedFlag

MathlibAnnex.CStarAlgebra.CAR.selectedVector_fixed_transportedFlag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: completedRootPureState, isStarProjection_transportedFlag, rootState_rootFlag, norm_selectedVector, selected_vectorFunctional

Used by in this Project: exists_nonzero_targetFixedSpace, selected_commonFixedProjection_eq_rankOne

[Read exact source](#)

tendsto_transport compressionError

MathlibAnnex.CStarAlgebra.CAR.tendsto_transport compressionError

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: tendsto_norm_transport compressionError

Used by in this Project: tendsto_representative_transport compression

[Read exact source](#)

trace_transportFlag_eq_trace_rootFlag

MathlibAnnex.CStarAlgebra.CAR.trace_transportFlag_eq_trace_rootFlag

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: representativeLink_final, representativeLink_initial, trace_mul_comm, transportFlag_zero

Used by in this Project: trace_transportFlag

[Read exact source](#)

Level 36

AtomicTarget

MathlibAnnex.CStarAlgebra.CAR.AtomicTarget

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: concreteTarget, selectedAtomicRepresentation

Used by in this Project: ShellFamilyTarget, representedGeneratorUnitary, restrictedRepresentation

[Read exact source](#)

isOrtho_cyclicSubspace_of_selectedStates

MathlibAnnex.CStarAlgebra.CAR.isOrtho_cyclicSubspace_of_selectedStates

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: exists_selectedCyclicUnitary, no_unitaryIntertwiner_selectedRepresentation

Used by in this Project: initialFixedProjection_eq_zero_on_otherCyclic

[Read exact source](#)

liftedCornerExponentialPairPath

MathlibAnnex.CStarAlgebra.CAR.liftedCornerExponentialPairPath

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: liftedCornerExponentialPath

Used by in this Project: liftedCornerExponentialPairPath_commute_stage

[Read exact source](#)

liftedCornerExponentialPath_commute_stage

MathlibAnnex.CStarAlgebra.CAR.liftedCornerExponentialPath_commute_stage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: liftedCornerExponentialPath, liftedCornerExponential_commute_stage

Used by in this Project: liftedCornerExponentialPairPath_commute_stage

[Read exact source](#)

norm_rootRepresentation_stage

MathlibAnnex.CStarAlgebra.CAR.norm_rootRepresentation_stage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: norm_ofStage, rootRepresentation_stage_injective

Used by in this Project: norm_rootRepresentation

[Read exact source](#)

representedInitialFlag

MathlibAnnex.CStarAlgebra.CAR.representedInitialFlag

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: selectedAtomicRepresentation, transportedFlag

Used by in this Project: instHasOrthogonalProjectionInfRepresentedInitialFlag,
instHasOrthogonalProjectionRepresentedInitialFlag

[Read exact source](#)

representedRootFlag

MathlibAnnex.CStarAlgebra.CAR.representedRootFlag

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootFlag, selectedAtomicRepresentation

Used by in this Project: instHasOrthogonalProjectionRepresentedRootFlag, representedFinalFlag

[Read exact source](#)

representedShellLink

MathlibAnnex.CStarAlgebra.CAR.representedShellLink

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: representativeShellData, selectedAtomicRepresentation

Used by in this Project: exists_completedAtomicShellModel, representedGenerator_comp_sourceShell

[Read exact source](#)

separableSpace_traceHilbertSpace

MathlibAnnex.CStarAlgebra.CAR.separableSpace_traceHilbertSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: denseRange_traceRepresentation_orbit, limitSeparableSpace

Used by in this Project: separableSpace_separableCounterexampleHilbertSpace

[Read exact source](#)

tendsto_representative_transported_compression

MathlibAnnex.CStarAlgebra.CAR.tendsto_representative_transported_compression

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: completedRootPureState, tendsto_transported_compressionError, transportedFlag

Used by in this Project: exists_targetDefectVectors_of_fixedSpace_ne_bot, initialFixedProjection_eq_zero_on_otherCyclic, initialFixedProjection_maps_ownCyclic, selected_commonFixedProjection_eq_rankOne, selected_commonFixedProjection_eq_zero

[Read exact source](#)

traceVector_ne_zero

MathlibAnnex.CStarAlgebra.CAR.traceVector_ne_zero

Exact source-authored theorem in the Naimark construction.

Route / section: separable-faithful

Immediate prerequisites in this Project: norm_traceVector

Used by in this Project: nontrivial_traceHilbertSpace

[Read exact source](#)

trace_transportedFlag

MathlibAnnex.CStarAlgebra.CAR.trace_transportedFlag

Exact source-authored theorem in the Naimark construction.

Route / section: car-source · density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: trace_rootFlag, trace_transportedFlag_eq_trace_rootFlag

Used by in this Project: tendsto_transportedFlag_orbit_zero

[Read exact source](#)

transportedFlag_root

MathlibAnnex.CStarAlgebra.CAR.transportedFlag_root

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: representativeShellData_root_alpha, transportedFlag

Used by in this Project: exists_surjective_selectedAtomicCyclicIsometry, instHasOrthogonalProjectionInfRepresentedFinalFlag

[Read exact source](#)

Level 37

initialFixedProjection_eq_zero_on_otherCyclic

MathlibAnnex.CStarAlgebra.CAR.initialFixedProjection_eq_zero_on_otherCyclic

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: isOrtho_cyclicSubspace_of_selectedStates, isStarProjection_transportFlag, tendsto_representative_transport_compression

Used by in this Project: exists_selectedAtomicCyclicIsometry

[Read exact source](#)

initialFixedProjection_maps_ownCyclic

MathlibAnnex.CStarAlgebra.CAR.initialFixedProjection_maps_ownCyclic

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: isStarProjection_transportFlag, tendsto_representative_transport_compression

Used by in this Project: exists_selectedAtomicCyclicIsometry

[Read exact source](#)

instHasOrthogonalProjectionRepresentedInitialFlag

MathlibAnnex.CStarAlgebra.CAR.instHasOrthogonalProjectionRepresentedInitialFlag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isStarProjection_transportFlag, representedInitialFlag

Used by in this Project: selectedAtomicRepresentation_transportFlag_eq_starProjection

[Read exact source](#)

instHasOrthogonalProjectionRepresentedRootFlag

MathlibAnnex.CStarAlgebra.CAR.instHasOrthogonalProjectionRepresentedRootFlag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isStarProjection_rootFlag, representedRootFlag

Used by in this Project: instHasOrthogonalProjectionRepresentedFinalFlag, selectedAtomicRepresentation_rootFlag_eq_starProjection

[Read exact source](#)

liftedCornerExponentialPairPath_commute_stage

MathlibAnnex.CStarAlgebra.CAR.liftedCornerExponentialPairPath_commute_stage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: liftedCornerExponentialPairPath, liftedCornerExponentialPath_commute_stage

Used by in this Project: exists_delta_liftedCornerUnitary_path_apply_sub_norm_It

[Read exact source](#)

nontrivial_traceHilbertSpace

MathlibAnnex.CStarAlgebra.CAR.nontrivial_traceHilbertSpace

Exact source-authored theorem in the Naimark construction.

Route / section: separable-faithful

Immediate prerequisites in this Project: traceVector_ne_zero

Used by in this Project: atomicCounterexampleEndpoint_and_exists_separable_faithful_representation_and_no_separable_irreducible_representation

[Read exact source](#)

norm_rootRepresentation

MathlibAnnex.CStarAlgebra.CAR.norm_rootRepresentation

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: dense_stageRange, norm_rootRepresentation_stage, rootRepresentationCLM

Used by in this Project: rootRepresentation_injective

[Read exact source](#)

representedFinalFlag

MathlibAnnex.CStarAlgebra.CAR.representedFinalFlag

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: RepresentativeShellFamily, representedRootFlag

Used by in this Project: instHasOrthogonalProjectionInfRepresentedFinalFlag, instHasOrthogonalProjectionRepresentedFinalFlag

[Read exact source](#)

representedGeneratorUnitary

MathlibAnnex.CStarAlgebra.CAR.representedGeneratorUnitary

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · trace-gns

Immediate prerequisites in this Project: generator, AtomicTarget

Used by in this Project: representedGenerator_comp_sourceShell

[Read exact source](#)

restrictedRepresentation

MathlibAnnex.CStarAlgebra.CAR.restrictedRepresentation

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · trace-gns

Immediate prerequisites in this Project: sourceHom, AtomicTarget

Used by in this Project: representedGenerator_comp_sourceShell

[Read exact source](#)

selected_commonFixedProjection_eq_rankOne

MathlibAnnex.CStarAlgebra.CAR.selected_commonFixedProjection_eq_rankOne

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: selectedVector_fixed_transportFlag,
tendsto_representative_transport_compression

Used by in this Project: ilnf_range_atomic_transportFlag_eq_span

[Read exact source](#)

selected_commonFixedProjection_eq_zero

MathlibAnnex.CStarAlgebra.CAR.selected_commonFixedProjection_eq_zero

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: isStarProjection_transportFlag,
tendsto_representative_transport_compression, instNontrivial, isIrreducible_selectedRepresentation,
no_unitaryIntertwiner_selectedRepresentation

Used by in this Project: ilnf_range_atomic_transportFlag_eq_span

[Read exact source](#)

separableSpace_separableCounterexampleHilbertSpace

MathlibAnnex.CStarAlgebra.CAR.separableSpace_separableCounterexampleHilbertSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: SeparableCounterexampleHilbertSpace, separableSpace_traceHilbertSpace

Used by in this Project: atomicCounterexampleEndpoint_and_exists_separable_faithful_representation_and_no_separable_irreducible_representation, cardinalMk_atomicCounterexampleAlgebra_le_continuum

[Read exact source](#)

tendsto_transportFlag_orbit_zero

MathlibAnnex.CStarAlgebra.CAR.tendsto_transportFlag_orbit_zero

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: isStarProjection_transportFlag, tracePositive, trace_transportFlag

Used by in this Project: exists_shell_sums_eq_on_cyclicSubspace

[Read exact source](#)

Level 38

exists_selectedAtomicCyclicIsometry

MathlibAnnex.CStarAlgebra.CAR.exists_selectedAtomicCyclicIsometry

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: initialFixedProjection_eq_zero_on_otherCyclic, initialFixedProjection_maps_ownCyclic, rootState_rootFlag, selectedAtomicRepresentation, selectedEmbedding

Used by in this Project: exists_surjective_selectedAtomicCyclicIsometry

[Read exact source](#)

lInf_range_atomic_transportFlag_eq_span

MathlibAnnex.CStarAlgebra.CAR.lInf_range_atomic_transportFlag_eq_span

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: selected_commonFixedProjection_eq_rankOne, selected_commonFixedProjection_eq_zero, selectedEmbedding

Used by in this Project: ambientInclusion_unitaryEquivalent, instHasOrthogonalProjectionlInfRepresentedFinalFlag, instHasOrthogonalProjectionlInfRepresentedInitialFlag

[Read exact source](#)

instHasOrthogonalProjectionRepresentedFinalFlag

MathlibAnnex.CStarAlgebra.CAR.instHasOrthogonalProjectionRepresentedFinalFlag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: instHasOrthogonalProjectionRepresentedRootFlag, representedFinalFlag

Used by in this Project: exists_completedAtomicShellModel

[Read exact source](#)

representedGenerator_comp_sourceShell

MathlibAnnex.CStarAlgebra.CAR.representedGenerator_comp_sourceShell

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · trace-gns

Immediate prerequisites in this Project: representedGeneratorUnitary, representedShellLink, restrictedRepresentation, transportedFlag

Used by in this Project: exists_targetShellReconstruction

[Read exact source](#)

rootRepresentation_injective

MathlibAnnex.CStarAlgebra.CAR.rootRepresentation_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: norm_rootRepresentation

Used by in this Project: exists_rootState_mul_ne_zero

[Read exact source](#)

selectedAtomicRepresentation_rootFlag_eq_starProjection

MathlibAnnex.CStarAlgebra.CAR.selectedAtomicRepresentation_rootFlag_eq_starProjection

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: instHasOrthogonalProjectionRepresentedRootFlag

Used by in this Project: exists_completedAtomicShellModel

[Read exact source](#)

selectedAtomicRepresentation_transportedFlag_eq_starProjection

MathlibAnnex.CStarAlgebra.CAR.selectedAtomicRepresentation_transportedFlag_eq_starProjection

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: instHasOrthogonalProjectionRepresentedInitialFlag

Used by in this Project: exists_completedAtomicShellModel

[Read exact source](#)

Level 39

exists_rootState_mul_ne_zero

MathlibAnnex.CStarAlgebra.CAR.exists_rootState_mul_ne_zero

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: rootRepresentation_injective

Used by in this Project: exists_rootFlag_mem_of_ne_zero_mem

[Read exact source](#)

exists_targetShellReconstruction

MathlibAnnex.CStarAlgebra.CAR.exists_targetShellReconstruction

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · trace-gns

Immediate prerequisites in this Project: isStarProjection_transportedFlag, representativeLink_final, representativeLink_initial, representedGenerator_comp_sourceShell, transportedFlag_mul_of_le, transportedFlag_zero

Used by in this Project: exists_shell_sums_eq_on_cyclicSubspace, exists_targetDefectVectors_of_fixedSpace_ne_bot, isIrreducible_restrictedRepresentation_of_all_fixed_bot

[Read exact source](#)

instHasOrthogonalProjectionInfRepresentedFinalFlag

MathlibAnnex.CStarAlgebra.CAR.instHasOrthogonalProjectionInfRepresentedFinalFlag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: `ilnf_range_atomic_transportFlag_eq_span`, `representedFinalFlag`, `transportedFlag_root`

Used by in this Project: `exists_completedAtomicShellModel`

[Read exact source](#)

instHasOrthogonalProjectionInfRepresentedInitialFlag

MathlibAnnex.CStarAlgebra.CAR.instHasOrthogonalProjectionInfRepresentedInitialFlag

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: `ilnf_range_atomic_transportFlag_eq_span`, `representedInitialFlag`

Used by in this Project: `exists_completedAtomicShellModel`

[Read exact source](#)

Level 40

exists_rootFlag_mem_of_ne_zero_mem

MathlibAnnex.CStarAlgebra.CAR.exists_rootFlag_mem_of_ne_zero_mem

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: `exists_rootState_mul_ne_zero`, `tendsto_norm_compressionError`

Used by in this Project: `limitIsSimpleRing`

[Read exact source](#)

exists_targetDefectVectors_of_fixedSpace_ne_bot

MathlibAnnex.CStarAlgebra.CAR.exists_targetDefectVectors_of_fixedSpace_ne_bot

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: `exists_targetShellReconstruction`, `tendsto_representative_transportCompression`

Used by in this Project: `exists_targetDefectVectors`

[Read exact source](#)

isIrreducible_restrictedRepresentation_of_all_fixed_bot

MathlibAnnex.CStarAlgebra.CAR.isIrreducible_restrictedRepresentation_of_all_fixed_bot

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: reduces_concreteTarget_of_generators, exists_targetShellReconstruction

Used by in this Project: exists_nonzero_targetFixedSpace

[Read exact source](#)

Level 41

exists_nonzero_targetFixedSpace

MathlibAnnex.CStarAlgebra.CAR.exists_nonzero_targetFixedSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: isIrreducible_restrictedRepresentation_of_all_fixed_bot, selectedVector_fixed_transportFlag, positiveLinearMapOfMemStateSpace

Used by in this Project: exists_targetDefectVectors

[Read exact source](#)

limitIsSimpleRing

MathlibAnnex.CStarAlgebra.CAR.limitIsSimpleRing

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: exists_rootFlag_mem_of_ne_zero_mem, limitNontrivial

Used by in this Project: isSimpleCStarAlgebra_limit, representation_injective, selectedRootRepresentation_injective

[Read exact source](#)

Level 42

exists_targetDefectVectors

MathlibAnnex.CStarAlgebra.CAR.exists_targetDefectVectors

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: exists_nonzero_targetFixedSpace, exists_targetDefectVectors_of_fixedSpace_ne_bot

Used by in this Project: exists_targetDefectVectorFamily

[Read exact source](#)

isSimpleCStarAlgebra_limit

MathlibAnnex.CStarAlgebra.CAR.isSimpleCStarAlgebra_limit

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitIsSimpleRing, IsSimpleCStarAlgebra

Used by in this Project: eq_zero_of_isCompactOperator_image

[Read exact source](#)

representation_injective

MathlibAnnex.CStarAlgebra.CAR.representation_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: limitIsSimpleRing

Used by in this Project: eq_zero_of_isCompactOperator_image

[Read exact source](#)

selectedRootRepresentation_injective

MathlibAnnex.CStarAlgebra.CAR.selectedRootRepresentation_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: completedRootPureState, limitIsSimpleRing, instNontrivial, selectedRepresentation

Used by in this Project: selectedAtomicRepresentation_injective

[Read exact source](#)

Level 43

eq_zero_of_isCompactOperator_image

MathlibAnnex.CStarAlgebra.CAR.eq_zero_of_isCompactOperator_image

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: isSimpleCStarAlgebra_limit, not_finiteDimensional, representation_injective

Used by in this Project: not_finiteDimensional_range_rootCorner

[Read exact source](#)

exists_targetDefectVectorFamily

MathlibAnnex.CStarAlgebra.CAR.exists_targetDefectVectorFamily

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: exists_targetDefectVectors

Used by in this Project: exists_surjective_selectedAtomicCyclicIsometry

[Read exact source](#)

selectedAtomicRepresentation_injective

MathlibAnnex.CStarAlgebra.CAR.selectedAtomicRepresentation_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: selectedAtomicRepresentation, selectedRootRepresentation_injective

Used by in this Project: exists_completedAtomicShellModel

[Read exact source](#)

Level 44

exists_completedAtomicShellModel

MathlibAnnex.CStarAlgebra.CAR.exists_completedAtomicShellModel

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: exists_irreducible_pureAtomicShellModel, sourceHom_injective, instHasOrthogonalProjectionInfRepresentedFinalFlag, instHasOrthogonalProjectionInfRepresentedInitialFlag, instHasOrthogonalProjectionRepresentedFinalFlag, representativeLink_final, representativeLink_initial, representativeShellData_root_link, representedShellLink, selectedAtomicRepresentation_injective, selectedAtomicRepresentation_rootFlag_eq_starProjection, selectedAtomicRepresentation_transportedFlag_eq_starProjection, transportedFlag_mul_of_le, transportedFlag_zero

Used by in this Project: shellFamilyLinks

[Read exact source](#)

exists_surjective_selectedAtomicCyclicIsometry

MathlibAnnex.CStarAlgebra.CAR.exists_surjective_selectedAtomicCyclicIsometry

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: exists_selectedAtomicCyclicIsometry, exists_targetDefectVectorFamily, transportedFlag_root

Used by in this Project: ambientInclusion_unitaryEquivalent

[Read exact source](#)

not_finiteDimensional_range_rootCorner

MathlibAnnex.CStarAlgebra.CAR.not_finiteDimensional_range_rootCorner

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: eq_zero_of_isCompactOperator_image, limitMatrixUnit, matrixUnit_apply

Used by in this Project: exists_rootCornerFamily_with_gram, exists_rootCornerSupported_exponential_apply_eq_involution

[Read exact source](#)

Level 45

ambientInclusion_unitaryEquivalent

MathlibAnnex.CStarAlgebra.CAR.ambientInclusion_unitaryEquivalent

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: intertwines_concreteTarget_of_generators, exists_surjective_selectedAtomicCyclicIsometry, ilnf_range_atomic_transportFlag_eq_span

Used by in this Project: isUniqueIrreducibleModel_shellFamilyInclusion

[Read exact source](#)

exists_rootCornerFamily_with_gram

MathlibAnnex.CStarAlgebra.CAR.exists_rootCornerFamily_with_gram

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: isStarProjection_limitMatrixUnit_zero_zero, not_finiteDimensional_range_rootCorner

Used by in this Project: exists_unitVector_vectorFunctional_eq_on_stage

[Read exact source](#)

exists_rootCornerSupported_exponential_apply_eq_involution

MathlibAnnex.CStarAlgebra.CAR.exists_rootCornerSupported_exponential_apply_eq_involution

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: exists_rootCornerSupported_exponential_eq_on, not_finiteDimensional_range_rootCorner, rootCornerSubspace

Used by in this Project: exists_liftedCornerExponential_apply_eq_involution

[Read exact source](#)

shellFamilyLinks

MathlibAnnex.CStarAlgebra.CAR.shellFamilyLinks

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: exists_completedAtomicShellModel

Used by in this Project: ShellFamilyTarget, shellFamilyLinks_map_selectedVector, shellFamilyLinks_root, shellFamilyLinks_sourceShell, shellFamilyLinks_unitary

[Read exact source](#)

Level 46

ShellFamilyTarget

MathlibAnnex.CStarAlgebra.CAR.ShellFamilyTarget

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction · trace-gns

Immediate prerequisites in this Project: AtomicTarget, shellFamilyLinks

Used by in this Project: AtomicCounterexampleAlgebra, isClosed_shellFamilyTarget, shellFamilyGenerator, shellFamilyInclusion, shellFamilySourceHom, shellFamilyTargetPartialOrder

[Read exact source](#)

exists_liftedCornerExponential_apply_eq_involution

MathlibAnnex.CStarAlgebra.CAR.exists_liftedCornerExponential_apply_eq_involution

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: exists_rootCornerSupported_exponential_apply_eq_involution, representation_liftedCornerExponential_apply_of_root

Used by in this Project: exists_delta_liftedCornerUnitary_path_apply_sub_norm_It

[Read exact source](#)

exists_unitVector_vectorFunctional_eq_on_stage

MathlibAnnex.CStarAlgebra.CAR.exists_unitVector_vectorFunctional_eq_on_stage

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: exists_rootCornerFamily_with_gram, norm_reconstructedStageVector_eq_one

Used by in this Project: exists_stageTests_crossRepresentation_path_approx, exists_unitary_crossRepresentation_path_approx

[Read exact source](#)

shellFamilyLinks_map_selectedVector

MathlibAnnex.CStarAlgebra.CAR.shellFamilyLinks_map_selectedVector

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: shellFamilyLinks

Used by in this Project: isUniqueIrreducibleModel_shellFamilyInclusion

[Read exact source](#)

shellFamilyLinks_root

MathlibAnnex.CStarAlgebra.CAR.shellFamilyLinks_root

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: shellFamilyLinks

Used by in this Project: isUniqueIrreducibleModel_shellFamilyInclusion

[Read exact source](#)

shellFamilyLinks_sourceShell

MathlibAnnex.CStarAlgebra.CAR.shellFamilyLinks_sourceShell

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · trace-gns

Immediate prerequisites in this Project: shellFamilyLinks

Used by in this Project: exists_shell_sums_eq_on_cyclicSubspace, isUniqueIrreducibleModel_shellFamilyInclusion

[Read exact source](#)

shellFamilyLinks_unitary

MathlibAnnex.CStarAlgebra.CAR.shellFamilyLinks_unitary

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · trace-gns

Immediate prerequisites in this Project: shellFamilyLinks

Used by in this Project: exists_shell_sums_eq_on_cyclicSubspace, isUniqueIrreducibleModel_shellFamilyInclusion

[Read exact source](#)

Level 47

exists_delta_liftedCornerUnitary_path_apply_sub_norm_It

MathlibAnnex.CStarAlgebra.CAR.exists_delta_liftedCornerUnitary_path_apply_sub_norm_It

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: exists_liftedCornerExponential_apply_eq_involution, liftedCornerExponentialPairPath_commute_stage

Used by in this Project: exists_delta_stageCentral_unitary_path_apply_sub_norm_It

[Read exact source](#)

isClosed_shellFamilyTarget

MathlibAnnex.CStarAlgebra.CAR.isClosed_shellFamilyTarget

Exact source-authored theorem in the Naimark construction.

Route / section: irreducible-capture · separable-faithful

Immediate prerequisites in this Project: ShellFamilyTarget

Used by in this Project: shellFamilyEndpoint

[Read exact source](#)

shellFamilyGenerator

MathlibAnnex.CStarAlgebra.CAR.shellFamilyGenerator

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: ShellFamilyTarget

Used by in this Project: exists_shell_sums_eq_on_cyclicSubspace

[Read exact source](#)

shellFamilyInclusion

MathlibAnnex.CStarAlgebra.CAR.shellFamilyInclusion

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: ShellFamilyTarget

Used by in this Project: atomicCounterexampleRepresentation, isIrreducible_shellFamilyInclusion, shellFamilyInclusion_injective

[Read exact source](#)

shellFamilySourceHom

MathlibAnnex.CStarAlgebra.CAR.shellFamilySourceHom

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · trace-gns

Immediate prerequisites in this Project: ShellFamilyTarget

Used by in this Project: apply_shellFamilySourceHom_eq_trace_of_apply_one_of_mul_comm, exists_shell_sums_eq_on_cyclicSubspace, shellFamilySourceHom_injective, shellFamilySourceHom_map_one

[Read exact source](#)

shellFamilyTargetPartialOrder

MathlibAnnex.CStarAlgebra.CAR.shellFamilyTargetPartialOrder

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · trace-gns

Immediate prerequisites in this Project: ShellFamilyTarget

Used by in this Project: shellFamilyTargetStarOrderedRing

[Read exact source](#)

Level 48

exists_delta_stageCentral_unitary_path_apply_sub_norm_It

MathlibAnnex.CStarAlgebra.CAR.exists_delta_stageCentral_unitary_path_apply_sub_norm_It

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: exists_delta_liftedCornerUnitary_path_apply_sub_norm_It, sum_norm_sq_map_limitMatrixUnit_star

Used by in this Project: exists_delta_exact_unitary_path_apply_eq_and_stage_commutator

[Read exact source](#)

exists_shell_sums_eq_on_cyclicSubspace

MathlibAnnex.CStarAlgebra.CAR.exists_shell_sums_eq_on_cyclicSubspace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: exists_targetShellReconstruction, shellFamilyGenerator, shellFamilyLinks_sourceShell, shellFamilyLinks_unitary, shellFamilySourceHom, tendsto_rootFlag_orbit_zero, tendsto_transportFlag_orbit_zero

Used by in this Project: reduces_cyclicSubspace_of_trace

[Read exact source](#)

isIrreducible_shellFamilyInclusion

MathlibAnnex.CStarAlgebra.CAR.isIrreducible_shellFamilyInclusion

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: shellFamilyInclusion

Used by in this Project: isUniqueIrreducibleModel_shellFamilyInclusion

[Read exact source](#)

shellFamilyInclusion_injective

MathlibAnnex.CStarAlgebra.CAR.shellFamilyInclusion_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: ambientInclusion_injective, shellFamilyInclusion

Used by in this Project: isUniqueIrreducibleModel_shellFamilyInclusion

[Read exact source](#)

shellFamilySourceHom_injective

MathlibAnnex.CStarAlgebra.CAR.shellFamilySourceHom_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · trace-gns

Immediate prerequisites in this Project: shellFamilySourceHom

Used by in this Project: exists_state_extension_trace, not_finiteDimensional_shellFamilyTarget, shellFamilyTargetNontrivial

[Read exact source](#)

shellFamilySourceHom_map_one

MathlibAnnex.CStarAlgebra.CAR.shellFamilySourceHom_map_one

Exact source-authored theorem in the Naimark construction.

Route / section: irreducible-capture · separable-faithful

Immediate prerequisites in this Project: shellFamilySourceHom

Used by in this Project: shellFamilyEndpoint

[Read exact source](#)

shellFamilyTargetStarOrderedRing

MathlibAnnex.CStarAlgebra.CAR.shellFamilyTargetStarOrderedRing

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · trace-gns

Immediate prerequisites in this Project: shellFamilyTargetPartialOrder

Used by in this Project: apply_shellFamilySourceHom_eq_trace_of_apply_one_of_mul_comm, exists_state_extension_trace, isSimpleCStarAlgebra_shellFamilyTarget, not_finiteDimensional_shellFamilyTarget

[Read exact source](#)

Level 49

apply_shellFamilySourceHom_eq_trace_of_apply_one_of_mul_comm

MathlibAnnex.CStarAlgebra.CAR.apply_shellFamilySourceHom_eq_trace_of_apply_one_of_mul_comm

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: eq_trace_of_apply_one_of_mul_comm, shellFamilySourceHom, shellFamilyTargetStarOrderedRing

Used by in this Project: eq_traceExtension_of_mem_stateSpace_of_mul_comm

[Read exact source](#)

exists_delta_exact_unitary_path_apply_eq_and_stage_commutator

MathlibAnnex.CStarAlgebra.CAR.exists_delta_exact_unitary_path_apply_eq_and_stage_commutator

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: exists_delta_stageCentral_unitary_path_apply_sub_norm_lt

Used by in this Project: exists_stageTests_exact_unitary_path_apply_eq_and_conjugate_sub_norm_lt, exists_unitary_crossRepresentation_path_approx

[Read exact source](#)

exists_state_extension_trace

MathlibAnnex.CStarAlgebra.CAR.exists_state_extension_trace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: norm_trace_le, shellFamilySourceHom_injective, shellFamilyTargetStarOrderedRing, trace_one

Used by in this Project: traceExtension

[Read exact source](#)

isUniqueIrreducibleModel_shellFamilyInclusion

MathlibAnnex.CStarAlgebra.CAR.isUniqueIrreducibleModel_shellFamilyInclusion

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: ambientInclusion_unitaryEquivalent, isIrreducible_shellFamilyInclusion, shellFamilyInclusion_injective, shellFamilyLinks_map_selectedVector, shellFamilyLinks_root, shellFamilyLinks_sourceShell, shellFamilyLinks_unitary

Used by in this Project: continuum_le_cardinalMk_dense_atomicCounterexampleAlgebra, isSimpleCStarAlgebra_shellFamilyTarget, isUniqueIrreducibleModelAmongNonUnital_shellFamilyInclusion

[Read exact source](#)

not_finiteDimensional_shellFamilyTarget

MathlibAnnex.CStarAlgebra.CAR.not_finiteDimensional_shellFamilyTarget

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: not_finiteDimensional, shellFamilySourceHom_injective, shellFamilyTargetStarOrderedRing

Used by in this Project: continuum_le_cardinalMk_dense_atomicCounterexampleAlgebra, not_isCompactOperatorModel_shellFamilyTarget

[Read exact source](#)

reduces_cyclicSubspace_of_trace

MathlibAnnex.CStarAlgebra.CAR.reduces_cyclicSubspace_of_trace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: reduces_concreteTarget_of_generators, exists_shell_sums_eq_on_cyclicSubspace

Used by in this Project: cyclicSubspace_eq_top_of_trace_of_cyclic

[Read exact source](#)

shellFamilyTargetNontrivial

MathlibAnnex.CStarAlgebra.CAR.shellFamilyTargetNontrivial

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: shellFamilySourceHom_injective

Used by in this Project: continuum_le_cardinalMk_dense_atomicCounterexampleAlgebra, isSimpleCStarAlgebra_shellFamilyTarget, nontrivial_shellFamilyTarget, not_isCompactOperatorModel_shellFamilyTarget

[Read exact source](#)

Level 50

cyclicSubspace_eq_top_of_trace_of_cyclic

MathlibAnnex.CStarAlgebra.CAR.cyclicSubspace_eq_top_of_trace_of_cyclic

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: reduces_cyclicSubspace_of_trace

Used by in this Project: denseRange_source_orbit_of_trace_of_cyclic, stronglyConverges_shell_sums_of_trace_of_cyclic

[Read exact source](#)

exists_stageTests_exact_unitary_path_apply_eq_and_conjugate_sub_norm_lt

MathlibAnnex.CStarAlgebra.CAR.exists_stageTests_exact_unitary_path_apply_eq_and_conjugate_sub_norm_lt

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: exists_common_stage_approx,
exists_delta_exact_unitary_path_apply_eq_and_stage_commutator

Used by in this Project: exists_stageTests_crossRepresentation_path_approx

[Read exact source](#)

exists_unitary_crossRepresentation_path_approx

MathlibAnnex.CStarAlgebra.CAR.exists_unitary_crossRepresentation_path_approx

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: exists_common_stage_approx,
exists_delta_exact_unitary_path_apply_eq_and_stage_commutator, exists_unitVector_vectorFunctional_eq_on_stage

Used by in this Project: nonempty_initialState

[Read exact source](#)

isSimpleCStarAlgebra_shellFamilyTarget

MathlibAnnex.CStarAlgebra.CAR.isSimpleCStarAlgebra_shellFamilyTarget

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: isUniqueIrreducibleModel_shellFamilyInclusion, shellFamilyTargetNontrivial,
shellFamilyTargetStarOrderedRing, IsSimpleCStarAlgebra, positiveLinearMapOfMemStateSpace_one

Used by in this Project: shellFamilyTarget_closedIdeal_dichotomy

[Read exact source](#)

isUniqueIrreducibleModelAmongNonUnital_shellFamilyInclusion

MathlibAnnex.CStarAlgebra.CAR.isUniqueIrreducibleModelAmongNonUnital_shellFamilyInclusion

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: isUniqueIrreducibleModel_shellFamilyInclusion

Used by in this Project: existsNaimarkCounterexampleOfDensity_continuum,
shellFamilyInclusion_unitaryEquivalent_nonUnital

[Read exact source](#)

nontrivial_shellFamilyTarget

MathlibAnnex.CStarAlgebra.CAR.nontrivial_shellFamilyTarget

Exact source-authored theorem in the Naimark construction.

Route / section: irreducible-capture · separable-faithful

Immediate prerequisites in this Project: shellFamilyTargetNontrivial

Used by in this Project: shellFamilyEndpoint

[Read exact source](#)

not_isCompactOperatorModel_shellFamilyTarget

MathlibAnnex.CStarAlgebra.CAR.not_isCompactOperatorModel_shellFamilyTarget

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: not_finiteDimensional_shellFamilyTarget, shellFamilyTargetNontrivial

Used by in this Project: existsNaimarkCounterexampleOfDensity_continuum,
shellFamilyTarget_not_compactOperatorModel

[Read exact source](#)

traceExtension

MathlibAnnex.CStarAlgebra.CAR.traceExtension

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: exists_state_extension_trace

Used by in this Project: traceExtension_mem_stateSpace, traceExtension_shellFamilySourceHom

[Read exact source](#)

Level 51

denseRange_source_orbit_of_trace_of_cyclic

MathlibAnnex.CStarAlgebra.CAR.denseRange_source_orbit_of_trace_of_cyclic

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: cyclicSubspace_eq_top_of_trace_of_cyclic

Used by in this Project: denseRange_tracialRepresentation_source_orbit, exists_pointed_unitary_of_trace_of_cyclic

[Read exact source](#)

exists_stageTests_crossRepresentation_path_approx

MathlibAnnex.CStarAlgebra.CAR.exists_stageTests_crossRepresentation_path_approx

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: exists_stageTests_exact_unitary_path_apply_eq_and_conjugate_sub_norm_lt, exists_unitVector_vectorFunctional_eq_on_stage

Used by in this Project: nonempty_initialState, nonempty_transition

[Read exact source](#)

shellFamilyInclusion_unitaryEquivalent_nonUnital

MathlibAnnex.CStarAlgebra.CAR.shellFamilyInclusion_unitaryEquivalent_nonUnital

Exact source-authored theorem in the Naimark construction.

Route / section: irreducible-capture · separable-faithful

Immediate prerequisites in this Project: isUniqueIrreducibleModelAmongNonUnital_shellFamilyInclusion

Used by in this Project: shellFamily_captures_nonunital

[Read exact source](#)

shellFamilyTarget_closedIdeal_dichotomy

MathlibAnnex.CStarAlgebra.CAR.shellFamilyTarget_closedIdeal_dichotomy

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful

Immediate prerequisites in this Project: isSimpleCStarAlgebra_shellFamilyTarget

Used by in this Project: shellFamilyEndpoint, tracialRepresentation_injective

[Read exact source](#)

shellFamilyTarget_not_compactOperatorModel

MathlibAnnex.CStarAlgebra.CAR.shellFamilyTarget_not_compactOperatorModel

Exact source-authored theorem in the Naimark construction.

Route / section: irreducible-capture · separable-faithful

Immediate prerequisites in this Project: not_isCompactOperatorModel_shellFamilyTarget

Used by in this Project: shellFamilyEndpoint

[Read exact source](#)

stronglyConverges_shell_sums_of_trace_of_cyclic

MathlibAnnex.CStarAlgebra.CAR.stronglyConverges_shell_sums_of_trace_of_cyclic

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: cyclicSubspace_eq_top_of_trace_of_cyclic

Used by in this Project: exists_pointed_unitary_of_trace_of_cyclic

[Read exact source](#)

traceExtension_mem_stateSpace

MathlibAnnex.CStarAlgebra.CAR.traceExtension_mem_stateSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: traceExtension

Used by in this Project: traceExtensionPositive

[Read exact source](#)

traceExtension_shellFamilySourceHom

MathlibAnnex.CStarAlgebra.CAR.traceExtension_shellFamilySourceHom

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: traceExtension

Used by in this Project: vectorFunctional_tracialRepresentation_source

[Read exact source](#)

Level 52

exists_pointed_unitary_of_trace_of_cyclic

MathlibAnnex.CStarAlgebra.CAR.exists_pointed_unitary_of_trace_of_cyclic

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: intertwines_of_source_of_generators,
denseRange_source_orbit_of_trace_of_cyclic, stronglyConverges_shell_sums_of_trace_of_cyclic

Used by in this Project: eq_traceExtension_of_mem_stateSpace_of_apply_shellFamilySourceHom_eq_trace

[Read exact source](#)

nonempty_initialState

MathlibAnnex.CStarAlgebra.CAR.nonempty_initialState

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: AlternatingState, exists_stageTests_crossRepresentation_path_approx,
exists_unitary_crossRepresentation_path_approx, mem_stageTests, protectedPrefix, transportBudget_pos

Used by in this Project: initialState

[Read exact source](#)

nonempty_transition

MathlibAnnex.CStarAlgebra.CAR.nonempty_transition

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: AlternatingTransition, exists_stageTests_crossRepresentation_path_approx, mem_densePrefix, mem_stageTests, protectedPrefix, transportBudget_pos

Used by in this Project: chosenTransition

[Read exact source](#)

shellFamily_captures_nonunital

MathlibAnnex.CStarAlgebra.CAR.shellFamily_captures_nonunital

Exact source-authored theorem in the Naimark construction.

Route / section: irreducible-capture · separable-faithful

Immediate prerequisites in this Project: shellFamilyInclusion_unitaryEquivalent_nonUnital

Used by in this Project: shellFamilyEndpoint

[Read exact source](#)

traceExtensionPositive

MathlibAnnex.CStarAlgebra.CAR.traceExtensionPositive

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: traceExtension_mem_stateSpace, positiveLinearMapOfMemStateSpace

Used by in this Project: TracialHilbertSpace, traceExtensionPositive_one

[Read exact source](#)

Level 53

TracialHilbertSpace

MathlibAnnex.CStarAlgebra.CAR.TracialHilbertSpace

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: traceExtensionPositive

Used by in this Project: tracialRepresentation, tracialVector

[Read exact source](#)

chosenTransition

MathlibAnnex.CStarAlgebra.CAR.chosenTransition

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: nonempty_transition

Used by in this Project: alternatingStates

[Read exact source](#)

initialState

MathlibAnnex.CStarAlgebra.CAR.initialState

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: nonempty_initialState

Used by in this Project: alternatingStates

[Read exact source](#)

shellFamilyEndpoint

MathlibAnnex.CStarAlgebra.CAR.shellFamilyEndpoint

Exact source-authored theorem in the Naimark construction.

Route / section: irreducible-capture · separable-faithful

Immediate prerequisites in this Project: ShellFamilyEndpoint, isClosed_shellFamilyTarget, nontrivial_shellFamilyTarget, shellFamilySourceHom_map_one, shellFamilyTarget_closedIdeal_dichotomy, shellFamilyTarget_not_compactOperatorModel, shellFamily_captures_nonunital

Used by in this Project: atomicCounterexampleEndpoint

[Read exact source](#)

traceExtensionPositive_one

MathlibAnnex.CStarAlgebra.CAR.traceExtensionPositive_one

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: traceExtensionPositive

Used by in this Project: norm_tracialVector

[Read exact source](#)

Level 54

alternatingStates

MathlibAnnex.CStarAlgebra.CAR.alternatingStates

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: chosenTransition, initialState

Used by in this Project: alternatingTransitions, leftAutomorphisms, outputUnitary, rightAutomorphisms

[Read exact source](#)

tracialRepresentation

MathlibAnnex.CStarAlgebra.CAR.tracialRepresentation

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: TracialHilbertSpace

Used by in this Project: denseRange_tracialRepresentation_orbit, inner_tracialVector_tracialRepresentation, tracialRepresentation_injective

[Read exact source](#)

tracialVector

MathlibAnnex.CStarAlgebra.CAR.tracialVector

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: TracialHilbertSpace

Used by in this Project: denseRange_tracialRepresentation_orbit, inner_tracialVector_tracialRepresentation, norm_tracialVector

[Read exact source](#)

Level 55

alternatingTransitions

MathlibAnnex.CStarAlgebra.CAR.alternatingTransitions

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: alternatingStates

Used by in this Project: leftAutomorphisms_step, leftAutomorphisms_symm_step, outputAutomorphisms_state_dense, rightAutomorphisms_step, rightAutomorphisms_symm_step

[Read exact source](#)

denseRange_tracialRepresentation_orbit

MathlibAnnex.CStarAlgebra.CAR.denseRange_tracialRepresentation_orbit

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: tracialRepresentation, tracialVector

Used by in this Project: denseRange_tracialRepresentation_source_orbit, eq_traceExtension_of_mem_stateSpace_of_apply_shellFamilySourceHom_eq_trace

[Read exact source](#)

inner_tracialVector_tracialRepresentation

MathlibAnnex.CStarAlgebra.CAR.inner_tracialVector_tracialRepresentation

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: tracialRepresentation, tracialVector

Used by in this Project: vectorFunctional_tracialRepresentation, vectorFunctional_tracialRepresentation_source

[Read exact source](#)

leftAutomorphisms

MathlibAnnex.CStarAlgebra.CAR.leftAutomorphisms

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: alternatingStates

Used by in this Project: leftAutomorphisms_step, leftAutomorphisms_symm_step, outputAutomorphisms_eq

[Read exact source](#)

norm_tracialVector

MathlibAnnex.CStarAlgebra.CAR.norm_tracialVector

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: traceExtensionPositive_one, tracialVector

Used by in this Project: traceExtension_star_unitary_mul_mul, tracialVector_ne_zero

[Read exact source](#)

outputUnitary

MathlibAnnex.CStarAlgebra.CAR.outputUnitary

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: alternatingStates

Used by in this Project: outputAutomorphisms

[Read exact source](#)

rightAutomorphisms

MathlibAnnex.CStarAlgebra.CAR.rightAutomorphisms

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: alternatingStates

Used by in this Project: outputAutomorphisms_eq, rightAutomorphisms_step, rightAutomorphisms_symm_step

[Read exact source](#)

Level 56

leftAutomorphisms_step

MathlibAnnex.CStarAlgebra.CAR.leftAutomorphisms_step

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: alternatingTransitions, leftAutomorphisms, mem_protectedPrefix

Used by in this Project: leftAutomorphisms_cauchy

[Read exact source](#)

leftAutomorphisms_symm_step

MathlibAnnex.CStarAlgebra.CAR.leftAutomorphisms_symm_step

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: alternatingTransitions, leftAutomorphisms, mem_symm_protectedPrefix

Used by in this Project: leftAutomorphisms_symm_cauchy

[Read exact source](#)

outputAutomorphisms

MathlibAnnex.CStarAlgebra.CAR.outputAutomorphisms

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: outputUnitary

Used by in this Project: outputAutomorphisms_eq

[Read exact source](#)

rightAutomorphisms_step

MathlibAnnex.CStarAlgebra.CAR.rightAutomorphisms_step

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: alternatingTransitions, mem_protectedPrefix, rightAutomorphisms

Used by in this Project: rightAutomorphisms_cauchy

[Read exact source](#)

rightAutomorphisms_symm_step

MathlibAnnex.CStarAlgebra.CAR.rightAutomorphisms_symm_step

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: alternatingTransitions, mem_symm_protectedPrefix, rightAutomorphisms

Used by in this Project: rightAutomorphisms_symm_cauchy

[Read exact source](#)

tracialVector_ne_zero

MathlibAnnex.CStarAlgebra.CAR.tracialVector_ne_zero

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: norm_tracialVector

Used by in this Project: nontrivial_tracialHilbertSpace

[Read exact source](#)

vectorFunctional_tracialRepresentation

MathlibAnnex.CStarAlgebra.CAR.vectorFunctional_tracialRepresentation

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: inner_tracialVector_tracialRepresentation

Used by in this Project: traceExtension_star_unitary_mul_mul

[Read exact source](#)

vectorFunctional_tracialRepresentation_source

MathlibAnnex.CStarAlgebra.CAR.vectorFunctional_tracialRepresentation_source

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful · trace-gns

Immediate prerequisites in this Project: inner_tracialVector_tracialRepresentation, traceExtension_shellFamilySourceHom

Used by in this Project: denseRange_tracialRepresentation_source_orbit, eq_traceExtension_of_mem_stateSpace_of_apply_shellFamilySourceHom_eq_trace

[Read exact source](#)

Level 57

denseRange_tracialRepresentation_source_orbit

MathlibAnnex.CStarAlgebra.CAR.denseRange_tracialRepresentation_source_orbit

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: denseRange_source_orbit_of_trace_of_cyclic, denseRange_tracialRepresentation_orbit, vectorFunctional_tracialRepresentation_source

Used by in this Project: exists_linearIsometryEquiv_traceHilbertSpace

[Read exact source](#)

eq_traceExtension_of_mem_stateSpace_of_apply_shellFamilySourceHom_eq_trace

MathlibAnnex.CStarAlgebra.CAR.eq_traceExtension_of_mem_stateSpace_of_apply_shellFamilySourceHom_eq_trace

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: denseRange_tracialRepresentation_orbit, exists_pointed_unitary_of_trace_of_cyclic, vectorFunctional_tracialRepresentation_source

Used by in this Project: eq_traceExtension_of_mem_stateSpace_of_mul_comm, existsUnique_state_extension_trace, traceExtension_star_unitary_mul_mul

[Read exact source](#)

leftAutomorphisms_cauchy

MathlibAnnex.CStarAlgebra.CAR.leftAutomorphisms_cauchy

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: denseRange_transportDense, leftAutomorphisms_step, summable_transportBudget

Used by in this Project: leftAutomorphisms_succ_cauchy

[Read exact source](#)

leftAutomorphisms_symm_cauchy

MathlibAnnex.CStarAlgebra.CAR.leftAutomorphisms_symm_cauchy

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: denseRange_transportDense, leftAutomorphisms_symm_step, summable_transportBudget

Used by in this Project: leftAutomorphisms_succ_symm_cauchy

[Read exact source](#)

nontrivial_tracialHilbertSpace

MathlibAnnex.CStarAlgebra.CAR.nontrivial_tracialHilbertSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: tracialVector_ne_zero

Used by in this Project: tracialRepresentation_injective

[Read exact source](#)

outputAutomorphisms_eq

MathlibAnnex.CStarAlgebra.CAR.outputAutomorphisms_eq

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: leftAutomorphisms, outputAutomorphisms, rightAutomorphisms

Used by in this Project: outputAutomorphisms_cauchy, outputAutomorphisms_state_dense, outputAutomorphisms_symm_cauchy

[Read exact source](#)

rightAutomorphisms_cauchy

MathlibAnnex.CStarAlgebra.CAR.rightAutomorphisms_cauchy

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: denseRange_transportDense, rightAutomorphisms_step, summable_transportBudget

Used by in this Project: outputAutomorphisms_symm_cauchy

[Read exact source](#)

rightAutomorphisms_symm_cauchy

MathlibAnnex.CStarAlgebra.CAR.rightAutomorphisms_symm_cauchy

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: denseRange_transportDense, rightAutomorphisms_symm_step, summable_transportBudget

Used by in this Project: outputAutomorphisms_cauchy

[Read exact source](#)

Level 58

eq_traceExtension_of_mem_stateSpace_of_mul_comm

MathlibAnnex.CStarAlgebra.CAR.eq_traceExtension_of_mem_stateSpace_of_mul_comm

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: apply_shellFamilySourceHom_eq_trace_of_apply_one_of_mul_comm, eq_traceExtension_of_mem_stateSpace_of_apply_shellFamilySourceHom_eq_trace

Used by in this Project: existsUnique_tracial_state

[Read exact source](#)

existsUnique_state_extension_trace

MathlibAnnex.CStarAlgebra.CAR.existsUnique_state_extension_trace

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project:

eq_traceExtension_of_mem_stateSpace_of_apply_shellFamilySourceHom_eq_trace

Used by in this Project: None in this Project

[Read exact source](#)

exists_linearIsometryEquiv_traceHilbertSpace

MathlibAnnex.CStarAlgebra.CAR.exists_linearIsometryEquiv_traceHilbertSpace

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: denseRange_traceRepresentation_orbit, denseRange_tracialRepresentation_source_orbit, inner_traceVector_traceRepresentation

Used by in this Project: traceGNSUnitary

[Read exact source](#)

leftAutomorphisms_succ_cauchy

MathlibAnnex.CStarAlgebra.CAR.leftAutomorphisms_succ_cauchy

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: leftAutomorphisms_cauchy

Used by in this Project: outputAutomorphisms_cauchy

[Read exact source](#)

leftAutomorphisms_succ_symm_cauchy

MathlibAnnex.CStarAlgebra.CAR.leftAutomorphisms_succ_symm_cauchy

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: leftAutomorphisms_symm_cauchy

Used by in this Project: outputAutomorphisms_symm_cauchy

[Read exact source](#)

outputAutomorphisms_state_dense

MathlibAnnex.CStarAlgebra.CAR.outputAutomorphisms_state_dense

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: alternatingTransitions, outputAutomorphisms_eq

Used by in this Project: tendsto_outputAutomorphisms_state

[Read exact source](#)

traceExtension_star_unitary_mul_mul

MathlibAnnex.CStarAlgebra.CAR.traceExtension_star_unitary_mul_mul

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project:

eq_traceExtension_of_mem_stateSpace_of_apply_shellFamilySourceHom_eq_trace, norm_tracialVector, vectorFunctional_tracialRepresentation

Used by in this Project: traceExtension_shellFamilySourceHom_mul

[Read exact source](#)

tracialRepresentation_injective

MathlibAnnex.CStarAlgebra.CAR.tracialRepresentation_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: nontrivial_tracialHilbertSpace, shellFamilyTarget_closedIdeal_dichotomy, tracialRepresentation

Used by in this Project: traceModelRepresentation_injective

[Read exact source](#)

Level 59

outputAutomorphisms_cauchy

MathlibAnnex.CStarAlgebra.CAR.outputAutomorphisms_cauchy

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: leftAutomorphisms_succ_cauchy, outputAutomorphisms_eq, rightAutomorphisms_symm_cauchy

Used by in this Project: hasInnerIntertwiningSequence_vectorFunctional

[Read exact source](#)

outputAutomorphisms_symm_cauchy

MathlibAnnex.CStarAlgebra.CAR.outputAutomorphisms_symm_cauchy

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: leftAutomorphisms_succ_symm_cauchy, outputAutomorphisms_eq, rightAutomorphisms_cauchy

Used by in this Project: hasInnerIntertwiningSequence_vectorFunctional

[Read exact source](#)

tendsto_outputAutomorphisms_state

MathlibAnnex.CStarAlgebra.CAR.tendsto_outputAutomorphisms_state

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: denseRange_transportDense, outputAutomorphisms_state_dense, tendsto_transportBudget_zero

Used by in this Project: hasInnerIntertwiningSequence_vectorFunctional

[Read exact source](#)

traceExtension_shellFamilySourceHom_mul

MathlibAnnex.CStarAlgebra.CAR.traceExtension_shellFamilySourceHom_mul

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: traceExtension_star_unitary_mul_mul

Used by in this Project: traceExtension_shellFamilyGenerator_mul

[Read exact source](#)

traceGNSUnitary

MathlibAnnex.CStarAlgebra.CAR.traceGNSUnitary

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: exists_linearIsometryEquiv_traceHilbertSpace

Used by in this Project: traceModelRepresentation

[Read exact source](#)

Level 60

hasInnerIntertwiningSequence_vectorFunctional

MathlibAnnex.CStarAlgebra.CAR.hasInnerIntertwiningSequence_vectorFunctional

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: HasInnerIntertwiningSequence, outputAutomorphisms_cauchy, outputAutomorphisms_symm_cauchy, tendsto_outputAutomorphisms_state

Used by in this Project: hasInnerIntertwiningSequence_of_pure

[Read exact source](#)

traceExtension_shellFamilyGenerator_mul

MathlibAnnex.CStarAlgebra.CAR.traceExtension_shellFamilyGenerator_mul

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: traceExtension_shellFamilySourceHom_mul

Used by in this Project: traceExtension_mul_comm

[Read exact source](#)

traceModelRepresentation

MathlibAnnex.CStarAlgebra.CAR.traceModelRepresentation

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: traceGNSUnitary

Used by in this Project: separableCounterexampleRepresentation, traceModelRepresentation_injective

[Read exact source](#)

Level 61

hasInnerIntertwiningSequence_of_pure

MathlibAnnex.CStarAlgebra.CAR.hasInnerIntertwiningSequence_of_pure

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: hasInnerIntertwiningSequence_vectorFunctional, IsPureState, positiveLinearMapOfMemStateSpace_one

Used by in this Project: homogeneity

[Read exact source](#)

traceExtension_mul_comm

MathlibAnnex.CStarAlgebra.CAR.traceExtension_mul_comm

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: traceExtension_shellFamilyGenerator_mul

Used by in this Project: existsUnique_tracial_state

[Read exact source](#)

traceModelRepresentation_injective

MathlibAnnex.CStarAlgebra.CAR.traceModelRepresentation_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: traceModelRepresentation, tracialRepresentation_injective

Used by in this Project: separableCounterexampleRepresentation_injective

[Read exact source](#)

Level 62

existsUnique_tracial_state

MathlibAnnex.CStarAlgebra.CAR.existsUnique_tracial_state

Exact source-authored theorem in the Naimark construction.

Route / section: trace-gns

Immediate prerequisites in this Project: eq_traceExtension_of_mem_stateSpace_of_mul_comm, traceExtension_mul_comm

Used by in this Project: None in this Project

[Read exact source](#)

homogeneity

MathlibAnnex.CStarAlgebra.CAR.homogeneity

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: hasInnerIntertwiningSequence_of_pure, homogeneity_of_innerIntertwiningSequences

Used by in this Project: representativeShellDataOfHomogeneity

[Read exact source](#)

Level 63

representativeShellDataOfHomogeneity

MathlibAnnex.CStarAlgebra.CAR.representativeShellDataOfHomogeneity

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: RepresentativeShellData, homogeneity, rootShell_identity_family, exists_shell_family_of_approximately_inner

Used by in this Project: representativeShellDataOfHomogeneity_root_alpha, representativeShellDataOfHomogeneity_root_link

[Read exact source](#)

Level 64

representativeShellDataOfHomogeneity_root_alpha

MathlibAnnex.CStarAlgebra.CAR.representativeShellDataOfHomogeneity_root_alpha

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: representativeShellDataOfHomogeneity

Used by in this Project: homogeneityShellFamily

[Read exact source](#)

representativeShellDataOfHomogeneity_root_link

MathlibAnnex.CStarAlgebra.CAR.representativeShellDataOfHomogeneity_root_link

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: representativeShellDataOfHomogeneity

Used by in this Project: homogeneityShellFamily

[Read exact source](#)

Level 65

homogeneityShellFamily

MathlibAnnex.CStarAlgebra.CAR.homogeneityShellFamily

Exact source-authored def in the Naimark construction.

Route / section: density-ch · irreducible-capture · separable-faithful · shell-construction

Immediate prerequisites in this Project: RepresentativeShellFamily, representativeShellDataOfHomogeneity_root_alpha, representativeShellDataOfHomogeneity_root_link

Used by in this Project: AtomicCounterexampleAlgebra, AtomicCounterexampleEndpoint

[Read exact source](#)

Level 66

AtomicCounterexampleAlgebra

MathlibAnnex.CStarAlgebra.CAR.AtomicCounterexampleAlgebra

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful · shell-construction

Immediate prerequisites in this Project: ShellFamilyTarget, homogeneityShellFamily

Used by in this Project: atomicCounterexampleRepresentation, continuum_le_cardinalMk_dense_atomicCounterexampleAlgebra, separableCounterexampleRepresentation

[Read exact source](#)

AtomicCounterexampleEndpoint

MathlibAnnex.CStarAlgebra.CAR.AtomicCounterexampleEndpoint

Exact source-authored def in the Naimark construction.

Route / section: irreducible-capture · separable-faithful

Immediate prerequisites in this Project: ShellFamilyEndpoint, homogeneityShellFamily

Used by in this Project: atomicCounterexampleEndpoint

[Read exact source](#)

Level 67

atomicCounterexampleEndpoint

MathlibAnnex.CStarAlgebra.CAR.atomicCounterexampleEndpoint

Exact source-authored theorem in the Naimark construction.

Route / section: irreducible-capture · separable-faithful

Immediate prerequisites in this Project: AtomicCounterexampleEndpoint, shellFamilyEndpoint

Used by in this Project: not_isIrreducible_of_separable

[Read exact source](#)

atomicCounterexampleRepresentation

MathlibAnnex.CStarAlgebra.CAR.atomicCounterexampleRepresentation

Exact source-authored def in the Naimark construction.

Route / section: separable-faithful · shell-construction

Immediate prerequisites in this Project: AtomicCounterexampleAlgebra, shellFamilyInclusion

Used by in this Project: not_isIrreducible_of_separable

[Read exact source](#)

continuum_le_cardinalMk_dense_atomicCounterexampleAlgebra

MathlibAnnex.CStarAlgebra.CAR.continuum_le_cardinalMk_dense_atomicCounterexampleAlgebra

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch

Immediate prerequisites in this Project: AtomicCounterexampleAlgebra, isUniqueIrreducibleModel_shellFamilyInclusion, not_finiteDimensional_shellFamilyTarget, shellFamilyTargetNontrivial

Used by in this Project: cardinalMk_atomicCounterexampleAlgebra, hasDensityCharacter_atomicCounterexampleAlgebra

[Read exact source](#)

separableCounterexampleRepresentation

MathlibAnnex.CStarAlgebra.CAR.separableCounterexampleRepresentation

Exact source-authored def in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: AtomicCounterexampleAlgebra, SeparableCounterexampleHilbertSpace, traceModelRepresentation

Used by in this Project: separableCounterexampleRepresentation_injective

[Read exact source](#)

Level 68

not_isIrreducible_of_separable

MathlibAnnex.CStarAlgebra.CAR.not_isIrreducible_of_separable

Exact source-authored theorem in the Naimark construction.

Route / section: separable-faithful

Immediate prerequisites in this Project: atomicCounterexampleEndpoint, atomicCounterexampleRepresentation

Used by in this Project: atomicCounterexampleEndpoint_and_exists_separable_faithful_representation_and_no_separable_irreducible_representation

[Read exact source](#)

separableCounterexampleRepresentation_injective

MathlibAnnex.CStarAlgebra.CAR.separableCounterexampleRepresentation_injective

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch · separable-faithful

Immediate prerequisites in this Project: separableCounterexampleRepresentation, traceModelRepresentation_injective

Used by in this Project: atomicCounterexampleEndpoint_and_exists_separable_faithful_representation_and_no_separable_irreducible_representation, cardinalMk_atomicCounterexampleAlgebra_le_continuum

[Read exact source](#)

Level 69

atomicCounterexampleEndpoint_and_exists_separable_faithful_representation_and_no_separable_irreducible_representation

MathlibAnnex.CStarAlgebra.CAR.atomicCounterexampleEndpoint_and_exists_separable_faithful_representation_and_no_separable_irreducible_representation

Exact source-authored theorem in the Naimark construction.

Route / section: separable-faithful

Immediate prerequisites in this Project: nontrivial_traceHilbertSpace, not_isIrreducible_of_separable, separableCounterexampleRepresentation_injective, separableSpace_separableCounterexampleHilbertSpace

Used by in this Project: None in this Project

[Read exact source](#)

cardinalMk_atomicCounterexampleAlgebra_le_continuum

MathlibAnnex.CStarAlgebra.CAR.cardinalMk_atomicCounterexampleAlgebra_le_continuum

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch

Immediate prerequisites in this Project: separableCounterexampleRepresentation_injective, separableSpace_separableCounterexampleHilbertSpace

Used by in this Project: cardinalMk_atomicCounterexampleAlgebra, hasDensityCharacter_atomicCounterexampleAlgebra

[Read exact source](#)

Level 70

cardinalMk_atomicCounterexampleAlgebra

MathlibAnnex.CStarAlgebra.CAR.cardinalMk_atomicCounterexampleAlgebra

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch

Immediate prerequisites in this Project: cardinalMk_atomicCounterexampleAlgebra_le_continuum, continuum_le_cardinalMk_dense_atomicCounterexampleAlgebra

Used by in this Project: None in this Project

[Read exact source](#)

hasDensityCharacter_atomicCounterexampleAlgebra

MathlibAnnex.CStarAlgebra.CAR.hasDensityCharacter_atomicCounterexampleAlgebra

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch

Immediate prerequisites in this Project: cardinalMk_atomicCounterexampleAlgebra_le_continuum, continuum_le_cardinalMk_dense_atomicCounterexampleAlgebra

Used by in this Project: existsNaimarkCounterexampleOfDensity_continuum

[Read exact source](#)

Level 71

existsNaimarkCounterexampleOfDensity_continuum

MathlibAnnex.CStarAlgebra.CAR.existsNaimarkCounterexampleOfDensity_continuum

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch

Immediate prerequisites in this Project: hasDensityCharacter_atomicCounterexampleAlgebra, isUniquelyIrreducibleModelAmongNonUnital_shellFamilyInclusion, not_isCompactOperatorModel_shellFamilyTarget

Used by in this Project: continuum_eq_aleph_one_iff_existsNaimarkCounterexampleOfDensity

[Read exact source](#)

Level 72

continuum_eq_aleph_one_iff_existsNaimarkCounterexampleOfDensity

MathlibAnnex.CStarAlgebra.CAR.continuum_eq_aleph_one_iff_existsNaimarkCounterexampleOfDensity

Exact source-authored theorem in the Naimark construction.

Route / section: density-ch

Immediate prerequisites in this Project: existsNaimarkCounterexampleOfDensity_continuum

Used by in this Project: None in this Project

[Read exact source](#)