Unital representative of the unique irreducible-representation class

`MathlibAnnex.Analysis.CStarAlgebra.Representation.IsSingletonIrreducibleModelAmongNonUnital`

Defines the corresponding condition for a unital representation, with competing nonzero irreducible representations quantified through the nonunital representation interface.

Statement

Let A be a unital complex C*-algebra, H a complex Hilbert space, and π a unital representation of A on H. The representation π is a representative of the unique unitary-equivalence class of nonzero irreducible representations of A: π is irreducible, and for every nonzero irreducible representation ρ presented through the nonunital representation interface, π is unitarily equivalent to the associated unital representation ρ.toUnital. Faithfulness and separability are not part of the definition.

Definition

IsSingletonIrreducibleModelAmongNonUnital π ↔ IsIrreducible π ∧ ∀ K ρ, IsIrreducible ρ → UnitaryEquivalent π (ρ.toUnital ...).

Assumptions

Let A be a unital complex C*-algebra, H a complex Hilbert space, and π a unital representation of A on H. Competing nonzero irreducible representations are quantified through the nonunital representation interface; irreducibility supplies the associated unital representations used in the comparison.

Conclusion

The representation π is a representative of the unique unitary-equivalence class of nonzero irreducible representations of A, with competitors quantified through the nonunital representation interface. Faithfulness and separability are not part of the definition.

Main citations

Lean source signature (exact)

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def IsSingletonIrreducibleModelAmongNonUnital
(pi : Representation A H) : Prop
```

Read exact MathlibAnnex v0.4.0 source

Exact Card identity

Stable Card ID: 637afab6889bdf11fe07e21325cab3df3d3f88baeb71dff1c973c7e2a3f1a794

Card SHA-256: 70bf38775c890eefb79631d1b6c0acb1310662f238112198f657a426c9c0edd2

Approved exposition SHA-256: 09c9dc90b2424077f8d9b49116e532a4f683bd503be36d79fee861e8d8f73374

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