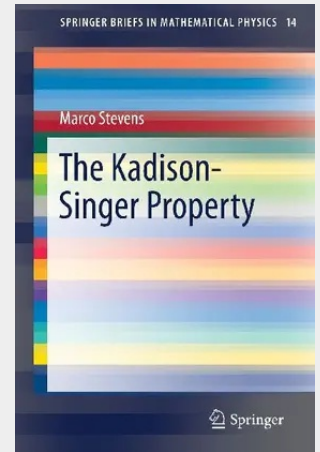


The Kadison-Singer Property

This book gives a complete classification of all algebras with the Kadison-Singer property, when restricting to separable Hilbert spaces. The Kadison-Singer property deals with the following question: given a Hilbert space H and an abelian unital C^* -subalgebra A of $B(H)$, does every pure state on A extend uniquely to a pure state on $B(H)$? This question has deep connections to fundamental aspects of quantum physics, as is explained in the foreword by Klaas Landsman. The book starts with an accessible introduction to the concept of states and continues with a detailed proof of the classification of maximal Abelian von Neumann algebras, a very explicit construction of the Stone-Cech compactification and an account of the recent proof of the Kadison-Singer problem. At the end accessible appendices provide the necessary background material.

This elementary account of the Kadison-Singer conjecture is very well-suited for graduate students interested in operator algebras and states, researchers who are non-specialists of the field, and/or interested in fundamental quantum physics.

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