

POSITIVE MAPS ON C^* -ALGEBRAS.

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Abstract.

In this survey we review the theory of positive maps in C^* -algebras, illustrating, in particular, the Gelfand-Naimark-Segal's representation, the Stinespring's construction, the Arveson's characterization of nuclear C^* -algebras and the Connes' use of completely positive maps in his classification of injective factors of von Neumann algebras. Problems and results are motivated through their application in various fields of mathematics and mathematical physics including topology, harmonic analysis, classical probability and potential theory, quantum field theory, quantum probability, statistical mechanics, quantum information and ergodic theory.