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Finite dimensionality in the non-commutative Choquet boundary

The non-commutative Choquet boundary of an operator algebra consists of $*$-representations with a certain unique extension property. In this talk, I will investigate the question of existence of finite-dimensional boundary points, which is a non-trivial issue even for finite-dimensional operator algebras. I will explain how this question is related to the residual finite-dimensionality of the C^*-envelope, and how finite-dimensional boundary points can be detected by tools from non-commutative function theory. Furthermore, I will explore the extremal case of C^*-liminal operator algebras – where all boundary points are finite-dimensional – via some recent developments in matrix convexity. This is joint work with Ian Thompson.