

A duality theorem for non-unital operator systems

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The recent work on nc convex sets of Davidson, Kennedy, and Shamovich show that there is a rich interplay between the category of operator systems and the category of compact nc convex sets, leading to new insights even in the case of C^* -algebras. The category of nc convex sets are a generalization of the usual notion of a compact convex set that provides meaningful connections between convex theoretic notions and notions in operator system theory. In this talk, we present a duality theorem for norm closed self-adjoint subspaces of $B(H)$ that do not necessarily contain the unit. We will present some insights this duality presents to various notions in C^* -algebras and operator systems such as simplicity. As well, we present a non-commutative dynamical characterization of locally compact property (T) groups. This is joint work with Matthew Kennedy and Nicholas Manor.