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Representations of operator systems

An operator system S is an involutive complex vector space equipped with a matricial order and an Archimedean order unit. The fundamental representation theorem of Choi and Effros asserts that an abstract operator system is completely order isomorphic to an operator system that acts nondegenerately on a Hilbert space; thus, every operator system S embeds in a unital C*-algebra generated by a copy of S. In this lecture I will review the maximal representation of Kirchberg and Wassermann, the minimal representation of Hamana, and describe the connections of Hamana's theory with Arveson's noncommutative Choquet boundary. I will also give some examples and a discuss some recent applications.