1163-46-834   **Roy Araiza*** (`raraiza@purdue.edu`) and **Travis Russell**. *A Look into the Abstract Theory of Operator Systems and Some Applications to Quantum Information Theory.*

Concretely an operator system $\mathcal{V}$ is a self-adjoint unital subspace of a C*-algebra $\mathcal{A}$. In particular one may take $\mathcal{A}$ to be $B(H)$, the bounded operators on some Hilbert space H. The abstract definition of an operator system is much more involved and this, along with other abstract properties of operator systems were first investigated in the 70's by Choi and Effros. It was realized that operator system techniques can be used to attack problems in C*-algebra theory and quantum information theory, though the latter was realized much later. Focusing on the abstract setting, since operator systems are not $*$-algebras then it is not clear how one would go about defining a projection in such a space. I will give an answer to this problem and discuss how one may use these abstract projections to characterize certain correlation sets that arise in quantum information theory. (Received September 13, 2020)

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