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A measure-theoretic characterization of Boolean algebras among orthomodular lattices

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Abstract: We investigate subadditive measures on orthomodular lattices. We show as the main result that an orthomodular lattice has to be distributive (=Boolean) if it possesses a unital set of subadditive probability measures. This result may find an application in the foundation of quantum theories, mathematical logic, or elsewhere.

Keywords: orthomodular lattice, subadditive probability measure

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