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Representation theorem for convex effect algebras

Comment.Math.Univ.Carolinae 39,4 (1998) 645-659.

Abstract: Effect algebras have important applications in the foundations of quantum mechanics and in fuzzy probability theory. An effect algebra that possesses a convex structure is called a convex effect algebra. Our main result shows that any convex effect algebra admits a representation as a generating initial interval of an ordered linear space. This result is analogous to a classical representation theorem for convex structures due to M.H. Stone.

Keywords: effect algebras, convex structures, ordered linear spaces
AMS Subject Classification: 81R10, 82B03