Generalized Homogeneous, Prelattice and MV-Effect Algebras.

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Abstract: We study unbounded versions of effect algebras. We show a necessary and sufficient condition, when lattice operations of a such generalized effect algebra P are inherited under its embeding as a proper ideal with a special property and closed under the effect sum into an effect algebra. Further we introduce conditions for a generalized homogeneous, prelattice or MV-effect effect algebras. We prove that every prelattice generalized effect algebra P is a union of generalized MV-effect algebras and every generalized homogeneous effect algebra is a union of its maximal sub-generalized effect algebras with hereditary Riesz decomposition property (blocks). Properties of sharp elements, the center and center of compatibility of P are shown. We prove that on every generalized MV-effect algebra there is a bounded orthogonally additive measure.