LATTICE EFFECT ALGEBRAS WITH TOTAL OPERATIONS

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Effect algebras are partial algebras that have been introduced by Foulis and Bennett as an algebraic structure providing an instrument for studying quantum effects that may be unsharp. Lattice effect algebras give a common generalization of orthomodular lattices (including Boolean algebras) and MV-effect albebras. In every lattice effect albebra the partial binary operation can be extended to a total binary operation. We bring some properties of that total operation for mutually compatible elements and consequently for elements of blocks or for elements of MV-effect algebras.Moreover,we bring some contra- examples,to show that some of those properties violates for noncompatible elements. We show some equivalent conditions for lattice effect algebras under which it becomes an MV-effect algebra or orthomodular lattice.