

Weakly standard BCC-algebras

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The notion of a BCK-algebra was introduced in 60's by Imai and Iséki as an algebraic formulation of Meredith's BCK-implicational calculus. Left-distributive BCK-algebras, known as Hilbert algebras, form an algebraic counterpart of the logical connective implication in intuitionistic logic. When solving the problem whether the class of all BCK-algebras forms a variety, Komori introduced the class of BCC-algebras and proved that this class is not a variety. The axioms of BCC-algebras allow us to define a natural order relation on a base set. It is well known that there is no restriction to the corresponding posets in that sense that one can define on every poset a structure of a BCC-algebra. This holds even for Hilbert algebras and the corresponding structures are called order-algebras. Order algebras satisfy a very strong property that every subset containing the distinguished element 1 (considered as a logical value "true") form a subalgebra. A natural problem to describe all BCC-algebras in which every 3-element subset containing 1 is a subalgebra was solved by the author in 2002, the resulting algebras are here called standard BCC-algebras. The aim of my talk is to present a new construction of BCC-algebras from posets requiring a weaker condition on its subalgebras. Resulting structures are called weakly-standard BCC-algebras.