

RELATION BETWEEN *BE*-ALGEBRAS AND *g*-HILBERT ALGEBRAS

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Abstract

Hilbert algebras are important tools for certain investigations in algebraic logic since they can be considered as fragments of any propositional logic containing a logical connective implication and the constant 1 which is considered as the logical value “true” and as a generalization of this was defined the notion of *g*-Hilbert algebra. In this paper, we investigate the relationship between *g*-Hilbert algebras, *gi*-algebras, implication groupoid and *BE*-algebras. In fact, we show that every *g*-Hilbert algebra is a self distributive *BE*-algebras and conversely. We show cannot remove the condition self distributivity. Therefore we show that any self distributive commutative *BE*-algebras is a *gi*-algebra and any *gi*-algebra is strong and transitive if and only if it is a commutative *BE*-algebra. We prove that the *MV*-algebra is equivalent to the bounded commutative *BE*-algebra.

Keywords: (Heyting, implication, (*g*-)Hilbert) algebra, *BE/CI*-algebra, dual (*S/Q/BCK*)-algebra, *gi*-algebra, implication groupoid, pre-logic, *MV*-algebra.

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