About Quasi-Jordan algebras generated by dialgebras and their relation with Leibniz algebras

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Abstract

Velásquez and Felipe introduced the notion of a quasi-Jordan algebra (see [3]). These algebras satisfy the right-commutativity \( a(bc) = a(cb) \) and the right quasi-Jordan identity \( (ba^2)a = (ba)b^2 \).

More recently, Kolesnikov, used techniques of conformal algebras related with dialgebras (see [2]), and Bremner, used polynomial identities (see [1]), to introduce a new definition of quasi-Jordan algebras based on the product

\[
x y := \frac{1}{2}(x \dashv y + y \vdash x),
\]

where \( x, y \) are elements in a dialgebra \( (D, \dashv, \vdash) \). These product satisfies the right-commutativity, the right quasi-Jordan and the associative-derivation identity: \( (a,b^2,c) = 2(a,b,c)b \).

In this talk we show that there are inner derivations (classical and left derivations) for quasi-Jordan algebras introduced by Kolesnikov and Bremner (K-B). Additionally, we show a relationship between K-B quasi-Jordan algebras and Leibniz algebras and few results about split quasi-Jordan algebras.

References