Rota-Baxter H-operators and pre-Lie H-pseudoalgebras over a cocommutative Hopf algebra H

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ABSTRACT

The aim of this paper is to study the Rota-Baxter H-operators and H-pseudoalgebras of different types over a cocommutative Hopf algebra H. Firstly, we introduce the concept of a Rota-Baxter H-operator on an H-pseudoalgebra, and give some basic properties and examples. Then, we obtain a large number of pre-Lie (resp. associative) H-pseudoalgebras from the ordinary Rota-Baxter algebras. Finally, the annihilation algebras of the left pre-Lie H-pseudoalgebras are discussed.