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A survey on the theory of Hopf algebras

(2 lectures)

A Hopf algebra is an algebra for which one can form the tensor product of two modules. For this, one needs a new structure element, the so-called coproduct. The theory of these algebras has progressed substantially in the last decade. We give an overview of the theory of Hopf algebras, starting from the definition and ending at some of the most recent developments. Throughout, we emphasize the analogy with groups; in particular, we will see what the analogues of Lagranges theorem and Cauchys theorem for Hopf algebras are.