

The structure of connected (graded) Hopf algebras

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In this talk, we will present a structure theorem for connected graded Hopf algebras over a field of characteristic 0 by claiming the existence of a family of homogeneous generators and a total order on the index set that satisfy some excellent conditions. The approach to the structure theorem is constructive based on the combinatorial properties of Lyndon words and the standard bracketing on words. As consequences of the structure theorem, we will show that connected graded Hopf algebras of finite Gelfand-Kirillov dimension over a field of characteristic 0 are all iterated Hopf Ore extensions of the base field as well as some keystone facts of connected Hopf algebras over a field of characteristic 0.

REFERENCES

1. G.-S. Zhou, Y. Shen and D.-M. Lu, *The structure of connected (graded) Hopf algebras*, arXiv: 1904.01918