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Classification of connected Hopf algebras up to prime-cube dimension.

We classify all connected Hopf algebras up to p^3 -dimension over an algebraically closed field of characteristic $p > 0$. In this talk, we are going to introduce the technique called PCD (primitive control deformation) used in the classification of p^3 -dimensional connected Hopf algebras such that the primitive space of these Hopf algebras is a two-dimensional abelian restricted Lie algebra. In summary ($p > 2$), we have 2 isomorphism classes for the p -dimensional, 8 isomorphism classes for the p^2 -dimensional and 55 isomorphism classes, 2 finite and 9 infinite parametric families for the p^3 -dimensional. (Received August 13, 2014)