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Generalized trigonometric and hyperbolic Hopf algebras

We generalize the trigonometric Hopf algebra and the less known hyperbolic Hopf algebra. One application of these is to number theory, by providing the right generalization of the Pythagorean equation and the right generalization of Fermat's Last Theorem. Another application is to Hopf algebras, namely, to the classification of finite dimensional pointed Hopf algebras.