

Weak Braided Hopf algebras

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Abstract.

In this talk, inspired by the work of Takeuchi about braided Hopf algebras, we introduced the notion of weak braided Hopf algebra in an strict monoidal category \mathcal{C} and we explain in detail how the first non-trivial examples of this algebraic structures can be obtained considering Hopf algebras in the non-strict braided monoidal category of left-left Yetter-Drinfeld modules over a weak Hopf algebra H which lives in an strict symmetric monoidal category \mathcal{C} with split idempotents. Also, we discuss the consequences of the definition of weak braided Hopf algebra obtaining the first relevant properties of these objects and generalizing the results proved by Böhm, Nill and Szlachányi as well as the main results about the target and source morphisms of a weak Hopf algebra obtained by Caenepeel and de Groot. Finally, we show how weak braided Hopf algebras provide new examples of weak entwining structures and, as a consequence, we prove the fundamental theorem of Hopf modules associated to a weak braided Hopf algebra.

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