
Hopf25

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Generalized Yetter-Drinfeld Modules, Center of Bi-actegories, and bi-Galois Co-objects

This is a joint work with Joost Vercruysse.

The notion of Yetter-Drinfeld modules (or YD modules) are very much well-known in the Hopf algebra community, and many generalizations of YD modules, such as anti-YD modules or YD contramodules has been studied under different motivations. An interesting fact is that many different researches show that the category of YD modules (or its variant) over Hopf algebras, is equivalent to some center of category of modules over the said Hopf algebra. In this talk, we study the (perhaps) most generalized version of YD modules studied by Caenepeel, Militaru, and Zhu in their 2002 textbook and show that it is also equivalent as a center of suitable bi-category. Moreover, we study a connection between bi-Galois co-objects and Yetter-Drinfeld modules, leading to braided structures in the category of generalized Yetter-Drinfeld modules.