
Hopf25

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Grothendieck-Verdier module categories and Frobenius algebras

A Grothendieck-Verdier category is a monoidal category having a duality structure more general than rigidity. It comes with two monoidal structures, one right exact and one left exact. The mixed associators for these are generically non-invertible. I will describe aspects of a natural class of module categories over Grothendieck-Verdier categories, such as two distinguished subcategories on which certain lax or oplax module functors are strong. The module category can be realized as the category of modules over the internal Hom of suitable objects in those subcategories. Moreover, it admits a partial relative Serre functor, which furnishes an equivalence between the two subcategories. The internal Hom of a fixed point of the relative Serre functor carries a natural structure of a Grothendieck-Verdier Frobenius algebra.