Hopf25

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Higher Verlinde Categories: The Mixed Case

Over a field of characteristic $p > 0$, the symmetric higher Verlinde categories are obtained by taking the abelian envelope of quotients of the category of tilting modules for the algebraic group SL_2. This construction for SL_2 can be generalized to Lusztig's quantum group for $\mathfrak{sl}_2$ and root of unity, which produces the mixed higher Verlinde categories. I will discuss the properties of these finite ribbon tensor categories. For instance, there is a functor analogue of the Frobenius-Lusztig twist, which can be used to establish a Steinberg tensor product formula for the simple objects. Further, it can be used to identify the symmetric center of the mixed higher Verlinde categories with (subcategories of) the symmetric higher Verlinde categories.