

On module categories over graded fusion categories

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This talk is based on a joint work with Evgeny Musicantov. A graded fusion category \mathcal{D} can be thought of as an extension of a given (base) fusion category \mathcal{C} by some finite group G . Etingof, Nikshych and Ostrik gave a cohomological description, in terms of obstructions and solutions, to all the possible extensions of \mathcal{C} by G .

In this talk I will describe a classification of module categories over graded fusion categories, in terms of module categories over the base fusion category, and the extension data of the category itself. This classification will also be via cohomology, by considering certain obstructions and their solutions. As a result, I will describe the module categories over the Tambara-Yamagami fusion categories.