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On classification of super-modular categories by rank

Super-modular categories are unitary premodular categories whose Mueger center is the category of super-vector spaces $s\text{Vec}$ generated by a fermion f . These categories are important for both mathematical and physical reasons. For example, they are used to model fermionic topological phases of matter. It is also interesting to pursue a theory of super-modular categories parallel to the one of modular categories. Moreover, the general structure of premodular categories is reduced to that of modular or super-modular categories, which is another motivation to study super-modular categories.

In this talk, we will present basic definitions and properties of super-modular categories and a classification of these categories up to rank 6. This talk is based on a joint work with P. Bruillard, C. Galindo, S-H. Ng, E. Rowell, and Z. Wang.