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Corey Jones* (cornjones88@gmail.com). *Permutation gauging of modular categories.*

Gauging a global symmetry group G of a field theory is the process of constructing a new theory where G acts by local symmetries. When the selection sectors of your theory are described by a modular tensor category (e.g. rational 2D conformal field theory or 2D topological phases of matter), gauging can be described categorically. However, gauging is very difficult from a mathematical perspective and is not always possible. There are difficult-to-compute cohomological obstructions to performing the gauging construction. In this talk, we will explain joint work with Terry Gannon which uses the stability properties of symmetric group cohomology to show that gauging the standard action of S_n on $\mathcal{C}^{\boxtimes n}$ is always possible for any modular category \mathcal{C} . (Received September 24, 2018)