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Cain Edie-Michell, Corey Jones and Julia Plavnik* (juliaplavnik@gmail.com). *Fusion rules for $\mathbb{Z}/2\mathbb{Z}$ permutation gauging.*

Given a unitary modular category with a symmetry by a group G , we can construct (when certain obstructions vanish) a new unitary modular category via the gauging procedure. One interesting example is given by the tensor square of a modular tensor category \mathcal{C} with the \mathbb{Z}_2 action induced by swapping the factors. During this talk, we will explain how to find the fusion rules for both the extension and the subsequent equivariantization (i.e the gauging) in terms of the fusion rules and modular data of the original modular category \mathcal{C} . (Received September 24, 2018)