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Paul Gustafson* (pgustafs@math.tamu.edu). *Towards finiteness for mapping class group representations from group-theoretical categories*. Preliminary report.

Given a spherical category \mathcal{C} and an oriented surface with boundary Σ , the Turaev-Viro TQFT gives a projective representation of the mapping class group $\text{MCG}(\Sigma)$. One question motivated from topological quantum computation is the following: when is the image of this representation finite? Etingof, Rowell, and Witherspoon showed that the image is finite when \mathcal{C} is group-theoretical and $\text{MCG}(\Sigma)$ is the braid group B_n . Fjelstad and Fuchs proved that the image is finite when \mathcal{C} is the representation category for a finite group and Σ is a surface with at most one boundary component. In this talk, I will work through the case where \mathcal{C} is an arbitrary group-theoretical category and Σ is a genus-2 closed surface. (Received February 13, 2016)