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Dmitri Nikshych* (dmitri.nikshych@unh.edu), Department of Mathematics and Statistics, Kingsbury Hall, 33 Academic Way, Durham, NH 03824. *Braided graded fusion categories*. Preliminary report.

We discuss construction of braided fusion categories graded by a finite Abelian group G with a given trivial component \mathcal{C} (i.e., braided G -extensions of fusion categories). Such extensions arise from monoidal functors from G to the braided part of the Picard Gr-category of \mathcal{C} .

We describe obstructions to existence of such extensions and their parameterization in terms of Abelian cohomology. We consider several concrete examples of extensions and compute their Picard groups. (Received July 18, 2016)