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Uwe Kaiser* (kaiser@math.boisestate.edu), Department of Mathematics, Boise State University, Boise, ID 83725. *On the categorification of skein modules and algebras*. Preliminary report.

Asaeda, Przytycki and Sikora categorified skein modules of surfaces in the strong sense of categorifying the polynomial invariants defined from a module basis of the dual module in the sense of Khovanov homology. A *weak* categorification of the skein module of a 3-manifold could be an abelian category with Grothendieck group the skein module of the 3-manifold. We discuss some few ideas towards such a construction. It leads to a category with morphisms defined from band-operations relating essentially the links of skein triples. The geometric skein equivalence relation on links should be essential in the construction of the necessary abelian structure of such a category. (Received February 14, 2011)