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Rhea Palak Bakshi* (rhea_palak@gwu.edu). *A Counterexample to Marché's Generalization of Witten's Conjecture.*

In 2019, Julien Marché formulated a generalization Witten's finiteness conjecture for skein modules over the ring of Laurent polynomials in an invertible element:

Let M be a closed compact oriented 3-manifold. Then there exists an integer $d \geq 0$ and finitely generated $\mathbb{Z}[A^{\pm 1}]$ -modules N_k so that

$$\mathcal{S}_{2,\infty}(M) = (\mathbb{Z}[A^{\pm 1}])^d \oplus \bigoplus_{k \geq 1} N_k,$$

where N_k is a $(A^k - A^{-k})$ -torsion module for each k .

In this talk, I will discuss a counterexample to this conjecture, which I recently found. The counterexample is based on the Kauffman bracket skein module of the connected sum of two copies of the projective space. The counterexample is based on the work of Maciej Mroczkowski. (Received February 13, 2020)