On a categorification for the sl(n) polynomial (for \( n > 3 \)). Preliminary report.

We use a special type of singular cobordisms, called foams, and a slightly modified version of the MOY state model for the sl(n) link polynomial (for \( n > 3 \)) to develop an integral cohomology theory corresponding to a rank-n Frobenius extension, which categorifies the sl(n) polynomial. In order to obtain a theory that provides efficient computations, we develop our construction so that it works for tangles, as well.

In this talk we explore our approach to the sl(n) cohomology theory, discuss the results gained, difficulties encountered, and efforts made to overcome them. (Received September 15, 2013)