

A categorification of the one-variable Kamada-Miyazawa polynomial

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Abstract. Khovanov homology is a homology theory for classical links whose graded Euler characteristic is the Jones polynomial. If we want to extend Khovanov homology to virtual links, Khovanov's construction does not immediately work and the main difficulty arising is the existence of Möbius cobordisms (bifurcations of type $1 \rightarrow 1$).

In this talk, we construct an extension of Khovanov homology to virtual links by taking suitable grading shifts and assigning one of two non-zero maps to each of the Möbius cobordisms. Our homology theory is a categorification of a one-variable specialization of the Kamada-Miyazawa polynomial.