

Khovanov Homology from Mirror Symmetry

Monday, 31 May 2021 09:00 (1h 15m)

Khovanov showed, more than 20 years ago, that there is a deeper theory underlying the Jones polynomial. The knot categorification problem is to find a uniform description of this theory, for all gauge groups, which originates from physics. I found two solutions to this problem, related by a version of two dimensional homological mirror symmetry. They are based on two descriptions of the theory that lives on defects of the six dimensional (0,2) CFT, which are supported on a link times time.

The theory turns out to be solvable explicitly. It is also more efficient, often exponentially so, than Khovanov's original approach.

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