SwissMAP

The Mathematics of Physics
National Centre of Competence in Research

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On skein theory in dimension four

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The Temperley-Lieb algebra describes the local behaviour of the Jones polynomial and gives rise to the Kauffman bracket skein modules of 3-manifolds. Going up by one dimension, Bar-Natan's dotted cobordisms describe the local behaviour of Khovanov homology and, likewise, give rise to skein modules of 4-manifolds. I will describe the construction of these skein modules and methods to compute them via a handle decomposition. Based on joint work with Morrison-Walker, Manolescu-Walker, and Hogancamp-Rose.

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