

talk 11: Moduli spaces for categorification of $U_q(sl_n)$ invariants

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Braiding of Verma modules for the quantum group $U_q(sl_n)$ leads to a TQFT that associates q-series invariants to 3- manifolds with knots and links. One of the main interests in these invariants is that they are expected to admit categorification, thus providing new insights into the mysterious world of smooth 4- manifolds. Building on recent works with M. Jagadale and P. Putrov, we describe what this homological lift looks like with mod 2 coefficients, and what the corresponding moduli spaces look like. Resurgent analysis and compactification divisors play important roles. We prove that the proposed categorification is invariant under Kirby moves for all weakly negative definite plumbed manifolds.

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