

ON CATEGORIFICATION OF SKEIN MODULES AND ALGEBRAS

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Abstract: Khovanov homology and its cousins are usually defined as functorial invariants of links in \mathbb{R}^3 . Embracing their reliance on link projections as a virtue, they admit extensions to links in thickened surfaces, and, thus, categorify surface skein modules and, conjecturally, their algebra structures. Skein algebras are related to character varieties and quantum Teichmüller theory, and are the subject of positivity conjectures that appear in reach of categorification techniques. The focus of this talk will be recent joint work with Hoel Queffelec on functorial $\mathfrak{gl}(2)$ surface link homologies.