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VISITING PROGRAM

TSVP TALK

Symmetries of Knots and Khovanov's Homology

2026

THU.

Oct. 15

15:00–16:00

HYBRID

L5D23, ZOOM



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A knot is an embedding of a circle into standard three-dimensional space. Knots are special objects in topology because they are very concrete and tractable, but they have deep connections to

three- and four-dimensional geometry, which is generally much harder to visualize and understand. One aspect of knot theory that is currently enjoying a lot of attention is knots with symmetries, which is to say knots which are preserved by some reflection or rotation of three-dimensional space.

Khovanov homology is an invariant of knots which was introduced around 2000. It has a deceptively simple construction, easy to describe on a blackboard, but encodes a wealth of geometric information. However, it turns out to be difficult to extract any good statements about knot symmetry from Khovanov homology in its original form. We discuss various ways one might upgrade such a theory geometrically to better understand its behavior in the presence of symmetry.



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Kristen Hendricks

Kristen Hendricks is a professor at Rutgers University working in low-dimensional and symplectic topology. Most of her research is on equivariant versions of various Floer-theoretic invariants of knots and three-manifolds. She obtained her PhD from Columbia in 2013, after which she was a postdoc at UCLA and an assistant professor at Michigan State before moving to Rutgers in 2019.

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