

Oklahoma State University

Lie Groups Seminar

Title

Webs and Howe duality for the quantum orthogonal group

Speaker: Haihan Wu, Johns Hopkins University

Date: Dec 4, 2024

Time: 3:30 PM

Room: MSCS 509

Abstract: The Jones polynomial can be defined with the Temperley-Lieb category, whose Karoubian completion is equivalent to the representation category of quantum $SL(2)$. In order to generalize the equivalence between a graphical category and the representation category of a quantum group, G. Kuperberg introduced web categories for rank 2 Lie algebras, where trivalent graphs are used in addition to planar matchings. Web categories have been widely studied since then.

I will talk about how to define the web category for the quantum orthogonal group, based on joint work with E. Bodish. I will also talk about recent progress on studying the quantum Howe duality for the orthogonal group, which has potential connections to the i-quantum group, based on upcoming joint work with E. Bodish and D. Tubbenhauer.

Zoom information: <https://okstate-edu.zoom.us/j/99387767313?pwd=fX62zoLoxmAmoVUTeYiImz2yHcC>

Hybrid seminar. Zoom information is in the abstract