



Kolloquium über Reine Mathematik

Einladung zu einem Vortrag

Dienstag, 15. Juli 2025

17 Uhr, Geom H4

Prof. Simon Lentner
(Universität Hamburg) - Habilitationsvortrag

Title:

Quantum groups and conformal field theory

Abstract:

Conformal quantum field theory in 2 dimensions has an associated representation theory that encodes certain aspects of the involved analysis, for example monodromy around singularities. More precisely: the category of representations of a suitable vertex algebra is a braided tensor category. Many aspects originating from the physics side can be studied in this categorical image, and this is a key research topic in Hamburg, in particular in cases when the representation theory is nonsemisimple. One focus of my own research here in Hamburg was the converse: Given the category of representations of a quantum group, a deformation of a Lie algebra with nonsemisimple features, how can we reconstruct a conformal field theory with this representation theory? There is a

conjecture due to B. Feigin and other starting around 2005, called logarithmic Kazhdan Lusztig conjecture, which we have recently solved in a quite general setup. In my talk, I will give a gentle impression of conformal field theory, then explain the different ingredients and the idea of proof.

Vor dem Vortrag (ab 16.30 Uhr) stehen im Foyer vor Hörsaal H4 Kaffee und Tee bereit.