



Kolloquium über Reine Mathematik

Einladung zu einem Vortrag

Dienstag, 28.10.2025

17 Uhr, Geom H4

Prof. Tobias Ekholm
(Uppsala University)

Skein valued curve counting

Abstract:

The skein module of a 3-dimensional manifold arose in knot theory and is the module generated by isotopy classes of framed links modulo three local relations. It turns out that the relations appear naturally at wall crossings in moduli spaces of holomorphic curves in a complex 3-dimensional space if the curve has real boundary conditions. Using this observation, it is possible to solve the longstanding problem of defining deformation invariant curve counts (open Gromov-Witten invariants) for holomorphic curves in a Calabi-Yau threefold with Lagrangian boundary conditions: the curves should be counted by the class of their boundaries in the skein module of the boundary condition. It furthermore allows to prove conjectured and find new relations between holomorphic curves in symplectic geometry and invariants of knots and links. The talk will explain the basic mechanisms for skein valued curve counts and survey some of the applications.

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