Leibniz Universität Hannover

Oberseminar
Institut für Algebraische Geometrie

Jenia Tevelev
(UMass Amherst/MPIM Bonn)

Semi-orthogonal decompositions of Fano varieties and moduli spaces

The study of fully faithful functors, including equivalences, between derived categories of smooth projective varieties (or, more generally, smooth proper triangulated categories) is, in many ways, analogous to the study of rational contractions in the minimal model program. For a Fano manifold, homological mirror symmetry predicts that its derived category admits canonical semi-orthogonal decompositions (related by the braid group action) with remarkable properties, such as compatibility with rational contractions. After discussing this motivation, I will survey potential constructions of canonical semi-orthogonal decompositions, focusing on the case where the Fano manifold is a moduli space of stable objects of some type on another manifold and where its birational geometry can be understood as a variation of the stability condition. As an application, we will construct the canonical semi-orthogonal decomposition of the derived category of the moduli space of stable vector bundles of rank 2 with a fixed determinant of odd degree on a smooth projective curve. When the degree is even, the moduli space is singular, and the construction provides canonical semi-orthogonal decompositions of its quasi-BPS categories; for example, they are compatible with the Hecke correspondence.

Donnerstag, 15.05.2025, 16:30 - 17:30, F142.
Leibniz Universität Hannover
Alle Interessierten sind herzlich eingeladen.