Department of Mathematics
Hong Kong University of Science and Technology

Algebra & Geometry Seminar

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Bridgeland stability conditions and cohomological Hall algebras II

ABSTRACT

This 12-hour course will cover selected material from arXiv:2502.19445, arXiv:2511.08576, and arXiv:2603.03386. The starting point is the derived McKay correspondence, which establishes a derived equivalence between the minimal resolution of an ADE singularity and a "noncommutative" surface encoded by the preprojective algebra of the corresponding affine ADE quiver.

In the first part of the course, we will give a brief introduction to Bridgeland stability conditions on triangulated categories and study the spaces of stability conditions for the categories appearing in the derived McKay correspondence. In the second part, we will investigate the relationships between cohomological Hall algebras (COHAs) arising from the triangulated categories appearing in the derived McKay correspondence. Finally, we will bring these two perspectives together and explain the construction of a family of COHAs over the space of Bridgeland stability conditions.

DATE / TIME

Wed, Nov 18, 2026
09:00 AM

VENUE

Room 5510, Academic Building
HKUST, Clear Water Bay, Hong Kong
researchseminars.org/talk/HKUST-AG/99

SCAN FOR DETAILS