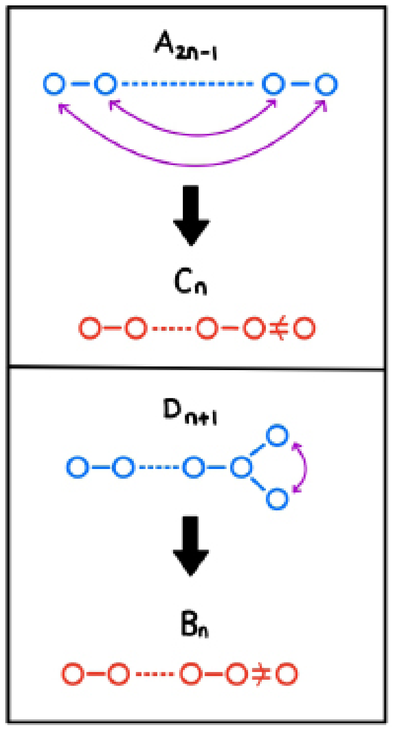
Berlin Mathematics Research Center MATH+

Berlin Mathematical School BMS

Kovalevskaya Colloquium

Friday, 29 May 2026 at 14:15

Langenbeck-Virchow-Haus, Luisenstraße 58/59, Seminar room, 1st floor *Tea & Cookies starting at 13:30*



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Victoria Hoskins
(University of Duisburg-Essen)

Moduli spaces for quivers with multiplicities

There is a long and rich history relating the representation theory of a quiver and an associated symmetric Kac-Moody algebra, where quiver moduli spaces give geometric realisations of representations of quantum groups of this Kac-Moody algebra. These moduli spaces classify certain quiver representations over a field, and can be geometrically constructed as a quotient of a product of general linear groups acting on tuples of matrices by conjugation. Representations of a quiver with multiplicities are defined by replacing the field with truncated polynomial rings, and they are related to a larger class of symmetrisable Kac-Moody Lie algebras. However, constructing moduli spaces is trickier, as the problem is described via a non-reductive group action.

In this talk, I will introduce moduli of representations of quivers and outline some connections with representation theory, before explaining recent progress for quivers with multiplicities and highlighting various interesting open problems. This is based on joint work with E. Hamilton, J. Jackson and T. Vernet.

Victoria Hoskins is an algebraic geometer at the University of Duisburg-Essen. Her research focuses on studying the geometry and construction of moduli spaces. She completed her PhD at the University of Oxford in 2012, and following postdocs and research visits in Berlin, Paris and Zurich, she took a junior professorship at the Freie University Berlin in 2014. Subsequently she became an assistant professor at Radboud University Nijmegen in 2020, before becoming a full professor in Essen in 2025.