MATHEMATICAL COLLOQUIUM
INAUGURAL LECTURE

UNIVERSITÄT DUISBURG ESSEN

Offen im Denken

Prof. Dr. Victoria Hoskins

University of Duisburg Essen

"Moduli of quiver representations with multiplicities"

There is a long and rich history relating the representation theory of a quiver and an associated symmetric Kac-Moody algebra, whose representations can be geometrically realised using quiver moduli spaces. 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 using algebro-geometric techniques. 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 algebras. I will introduce moduli of representations of quivers with lots of examples 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.

Location: University of Duisburg-Essen, Faculty of Mathematics, Thea-Leymann-Str. 9, 45127 Essen, **Room WSC-O-5.01**

Date and Time: Wednesday, June 24, 2026 at 4:00 PM

Before the lecture, there will be an opportunity for discussion over coffee and tea from 3:30 PM in Room **WSC-O-5.01.**

The Mathematics Faculty