Otto-von-Guericke-Universität Magdeburg
Fakultät für Mathematik

Auf Einladung des Institutes für Algebra und Geometrie spricht

Michael Schein

(Bar-Ilan University, Israel)

über das Thema

An application of model theory to a counting problem in algebra: the effect of central amalgamation on normal subgroup growth in nilpotent groups

Der Vortrag findet dual statt.
per Zoom Meeting ID 971 4945 5855, passcode 490213 oder G02-210

Zeit: Dienstag, 21. Juni 2022, 13.00 Uhr

Zu diesem Vortrag laden wir alle Interessierten herzlich ein.

Dr. Joshua Maglione

Abstract: A finitely generated group has finitely many subgroups of any given index. The normal zeta function of a group is a Dirichlet series, introduced by Grunewald, Segal, and Smith in 1988, whose n-th coefficient is the number of normal subgroups of index n. This zeta function is usually difficult to compute explicitly. However, if G is a class-two-nilpotent group, the known examples suggest that the complexity of the zeta function does not increase, apart from a very explicit factor, if G is replaced by the amalgamation of m copies of G over their mutual center. In joint work with Tomer Bauer, we prove this for all (finitely generated and torsion-free) class-two-nilpotent groups.

The talk will focus not on the technical details of the argument but on the tools used, which come from algebraic combinatorics and model theory and are applicable to a wide range of problems. In particular, although mathematicians who do not work in logic usually don't need to care about the precise language in which their claims can be stated, sometimes it pays to do so.

The talk will assume no specialized background.