

Einladung

# Würzburger Mathematisches Kolloquium

Julius-Maximilians-Universität Würzburg • Institut für Mathematik

## Thomas Weigel

University of Milano-Bicocca, Italien,  
in diesem Semester Giovanni-Prodi-Gastprofessor

## Necklaces, Finite Fields and Lie Algebras

Dienstag, 5. Juli 2022 • 14:15 Uhr

Seminarraum SE40 • Mathematik Ost (Emil-Fischer-Straße 40, 97074 Würzburg)

Der Vortrag wird auch Zoom-Meeting übertragen: [go.uni-wue.de/ifmcolloquium-zoom](https://go.uni-wue.de/ifmcolloquium-zoom)

**Abstract.** Necklace polynomials were introduced by Colonel C. P. N. Moreau in the second half of the 19th century as a device for counting the number of primitive necklaces of length  $n$  made up by beads of  $r$  different colours. These polynomials show also up considering the number of irreducible polynomials over a finite field  $F$ . Surprisingly, these polynomials also allow to calculate the dimensions of the homogeneous components of a graded Lie algebra of type  $FP$  using the eigenvalues of the Poincaré polynomial. This generalises E. Witt's formula to all Lie algebras of type  $FP$ .

