

Universität
Münster

If people do not believe that mathematics is simple, it is only because they do not realize how complicated life is.

17. John von Neumann-Lecture

On three-term progression-free sets and related questions in additive combinatorics

Prof. Dr. Lisa Sauermann (University of Bonn)

Thursday, 17 October 2024, 4.15 pm, Lecture hall M4

Given some large positive integer N , what is the largest possible size of a subset of $\{1, \dots, N\}$ which does not contain a three-term arithmetic progression (i.e. without three distinct elements x, y, z satisfying $x+z=2y$)? Similarly, given a prime p and a large positive integer n , what is the largest possible size of a subset of the vector space \mathbb{F}_p^n which does not contain a three-term arithmetic progression? This talk will explain the known bounds for these longstanding problems in additive combinatorics, give an overview of proof techniques and discuss their applications to other additive combinatorics problems.

After the lecture, we cordially invite you to a reception (Common Room)

Organisers:

Prof. Dr. Joachim Cuntz
Prof. Dr. Angela Stevens
Prof. Dr. Dr. Katrin Tent
Prof. Dr. Burkhard Wilking



Lisa Sauermann is a German mathematician specializing in extremal and probabilistic combinatorics. She held positions at Stanford, the Institute for Advanced Study in Princeton, and was an assistant professor at MIT before accepting a Hausdorff Chair at the University of Bonn in 2023. Her numerous awards include the Richard-Rado-Preis, the European Prize in Combinatorics and the von-Kaven Preis of the DFG.

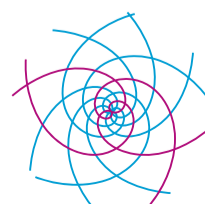


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