Mathematisches Forschungsinstitut Oberwolfach

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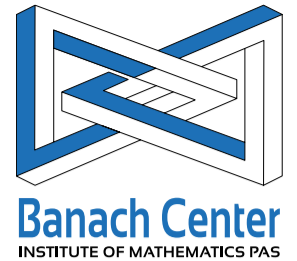
Banach Center – Oberwolfach Graduate Seminar

Modern algebraic geometry in algebraic combinatorics and tensors

Organizers: Joachim Jelisiejew, Warsaw
Mateusz Michałek, Constanz
Date (ID): 2 – 7 November 2025 (2545a)
Deadline: 1 July 2025

In recent years, modern algebraic geometry, such as moduli spaces and enumeration, has been very successfully applied to combinatorics and tensors, resolving old conjectures, giving easier proofs of classical theorems, and opening new research paths. This seminar will focus on the two main interconnected topics.

- Interactions between matroid theory, geometry, and intersection theory, as in the recent work of June Huh and beyond, using varieties of complete linear maps and complete quadrics,
- New invariants of tensors, such as 111-algebra and moduli spaces of tensors from Hilbert schemes of points and its generalisations.

The common motive is to associate new intricate invariants to seemingly explicit, structureless objects such as tensors or graphs.

Detailed information on the program is available at **www.mfo.de/occasion/2545a**.

The seminar takes place at the Mathematical Research and Conference Center of the Institute of Mathematics of the Polish Academy of Sciences in Będlewo. Please see the website of the center where you can find basic information (location, travel etc.): **www.impan.pl/ en/activities/bedlewo-conference-center/ about-center**. Accommodation and meals are free for approved participants and there is no seminar fee. In general, travel expenses can not be reimbursed. The number of participants is restricted to about 30 persons.

Applications including title, ID and date of the intended seminar, together with **one pdf-file attached** containing

- full name and university/institute address, incl. e-mail address
- short CV and publication list
- present position, university
- name of supervisor of Ph.D. thesis
- a short summary of previous work and interest

should be sent by e-mail via **seminars@mfo.de** until 1 July 2025 to:

Prof. Dr. Matthias Hieber
Mathematisches Forschungsinstitut Oberwolfach
Schwarzwaldstr. 9 – 11
77709 Oberwolfach
Germany

Practical questions (visa etc.) of approved applicants can be checked with the Banach Center via **office@impan.pl**.