



Oberwolfach Seminar

Modern Developments in Matroid Theory

Organizers: Graham Denham, London ON
Jacob Matherne, Raleigh
Gerhard Röhrle, Bochum
Uli Walther, West Lafayette
Date (ID): 8 – 13 June 2025 (2524b)
Deadline: 1 March 2025

Recently, a number of long-standing conjectures in the field of matroid theory, and more generally in combinatorics, have been resolved by the injection of algebraic geometry and Hodge theory into the subject. A non-exhaustive list includes Adiprasito, Huh, and Katz's resolution of the Heron–Rota–Welsh conjecture, the proof of Dowling–Wilson's top-heavy conjecture by Braden, Huh, Matherne, Proudfoot, and Wang, as well as the proof of Brylawski and Dawson's conjectures by Ardila, Denham and Huh.

This Oberwolfach Seminar will present these (and related) novel developments in an approachable way to graduate students and postdocs. Participants will learn some rich and deep modern algebra, and leave equipped with an understanding of how this mathematics continues to be applied to solve a diverse range of problems. Its occasion is especially timely due to the vibrant developments the theme is currently undergoing ever since it took off in the wake of June Huh's 2022 Fields Medal, which was awarded partly based on the achievements noted above.

www.mfo.de/occasion/2524b

The seminar takes place at the Mathematisches Forschungsinstitut Oberwolfach. The Institute covers board and lodging. By the support of the Carl Friedrich von Siemens Foundation travel expenses can be reimbursed up to 150 EUR in average per person (against copies of travel receipts). The number of participants is restricted to 24.

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 March 2025 to:

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