GOETHE UNIVERSITÄT FRANKFURT AM MAIN

Frankfurter Seminar

Kolloquium des Instituts für Mathematik

Sommersemester 2026

Frankfurter Seminar, 01. Juli 2026, 16:45 Uhr

Franziska Jahnke (Universität Münster)

Transfer Theorems between Fields of Different Characteristic – A Model-theoretic Approach

Under which circumstances can we use insights about fields of positive characteristic to understand fields of characteristic 0 (and conversely)?

Classical methods to transfer results between fields of different characteristics are the Lefshetz principle and the Ax Kochen/Ershov Theorem which states that asymptotically, the theory of the p-adic numbers $\mathbb{Q}_p$ and of power series fields $\mathbb{F}_p((t))$ coincide. Tilting perfectoid fields gives a transfer principle between certain henselian fields of mixed characteristic and their positive characteristic counterparts and vice versa.

In this talk, we survey various transfer principles and present a model-theoretic approach to tilting via ultraproducts, which allows us to transfer many first-order properties between a perfectoid field and its tilt.

Tee ab 16:15 Uhr

Robert-Mayer-Straße 10 | Raum 711

Ginkgo-Seminar 15:15 - 16:00 Uhr

Andreas Gross, Ultraproducts

Teilnahme nur für Studierende, Promovierende und Postdocs

Tee 16:15 - 16:45 Uhr

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