



Lothar-Collatz-Kolloquium über Angewandte Mathematik

Donnerstag, den 18. Dezember 2025, um 14:30 Uhr, im Hörsaal 6

Prof. Dr. Angela Stevens*

(Universität Münster, Institut für Analysis und Numerik)

Kinetic equations in mathematical epidemiology and 'complete' sets of invariants

Zusammenfassung/Abstract:

The hydrodynamic limit of a stochastic epidemiological model, where two infection scenarios alternate, namely

- a) infections in separated groups of finite size
 - b) and infections at meeting places of finite capacity, where individuals meet randomly,
- results in a McKendrick system with polynomial infection force.

For this system of kinetic equations invariants can be determined which foliate the solution space and uniquely determine the outcome of the model epidemics. The kinetic equations also allow to link global data of an epidemic with not so easily observable local rate dependencies.

(Joint works with Stephan Luckhaus, Universität Leipzig)

Kontakt:

Prof. Dr. Jens Rademacher

Angewandte Mathematik

Raum 140, Tel.: 040 42838-5122

E-Mail: jens.rademacher@uni-hamburg.de

Web: <https://www.math.uni-hamburg.de/forschung/bereiche/am/ang-dynamische-systeme/personen/rademacher-jens.html>

*** Prof. Dr. Angela Stevens**

Universität Münster, Institut für Analysis und Numerik

Einsteinstr. 62, 48149 Münster

E-Mail: angela.stevens@uni-muenster.de

Web: <https://www.uni-muenster.de/AMM/stevens/>