A U S H A N G

FREIE UNIVERSITÄT BERLIN
Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

D I S P U T A T I O N

Montag, 11. November 2024, 09:30 Uhr

Ort: Seminarraum 005
(Fachbereich Mathematik und Informatik, Takustr. 9, 14195 Berlin)

Disputation über die Doktorarbeit von

Nadezhda Malysheva

Thema der Dissertation:
Hybrid algorithm for efficient simulation of spreading processes on adaptive networks

Thema der Disputation:
Contact networks in epidemiological modeling

Die Arbeit wurde unter der Betreuung von **Prof. Dr. M. von Kleist** durchgeführt.

Abstract: Contact networks are crucial in shaping the spread dynamics of infectious diseases and are integral to epidemiological modeling. This talk will emphasise the importance of underlying contact network structures in understanding transmission patterns. We will explore commonly used network types, beginning with fully connected networks and moving to more realistic static network structures and complex systems like temporarily evolving and adaptive networks. Each network type provides unique insights, illustrating how varied structures impact outbreak predictions and the effectiveness of control measures.

In the latter part of the talk, I will discuss the challenges of modeling disease spread on adaptive networks, particularly regarding algorithm selection for simulating spreading processes. I will present a novel algorithmic approach to address these challenges, offering a solution that enhances the runtime while maintaining the accuracy of the outcome.

Die Disputation besteht aus dem o. g. Vortrag, danach der Vorstellung der Dissertation einschließlich jeweils anschließenden Aussprachen.

Interessierte werden hiermit herzlich eingeladen

Der Vorsitzende der Promotionskommission
Prof. Dr. M. von Kleist