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

Freitag, 8. Mai 2026, 12:00 Uhr

Ort: Hörsaal (Raum Nr. 2005)
(Zuse-Institut Berlin, Takustr. 7, 14195 Berlin)

Disputation über die Doktorarbeit von

Margarita Kostré

Thema der Dissertation:
Topics in particle-based simulation: Multiscale Models and optimization methods

Thema der Disputation:
Multiscale Search in the Bees Algorithm

Die Arbeit wurde unter der Betreuung von **Prof. Dr. C. Schütte** durchgeführt.

Abstract: The Bees Algorithm (BA) is a population-based optimization method inspired by the foraging behavior of honey bees. Originally developed for continuous optimization, it has since been applied to a wide range of problems, including combinatorial optimization and machine learning.
In comparison to other swarm-inspired algorithms, the exploitation process is governed not only by fitness, but by an explicit neighbourhood that is progressively shrunk and re-centered around improved solutions. New candidate solutions are then sampled at random within this neighbourhood, which effectively controls the scale at which the search space is explored.
In this talk, I will focus on how this multiscale search influences convergence, exploration, and stagnation. I will further illustrate how these mechanisms affect performance on different types of optimization landscapes and how problem-specific modifications can improve its effectiveness.

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. C. Schütte