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

Donnerstag, 18. Oktober 2018, 15:15

Ort: Seminarraum 130

(Fachbereich Mathematik und Informatik, Arnimallee 3, 14195 Berlin)

Disputation über die Doktorarbeit von

Herrn Mark James Curran

Thema der Dissertation:

The Hysteretic Limit of a Reaction-Diffusion System with a Small Parameter

Thema der Disputation:

The Weak Law of Large Numbers and the Central Limit Theorem

Die Arbeit wurde unter der Betreuung von **PD Dr. P. Gurevich** durchgeführt.

Abstract of dissertation:
We consider a reaction-diffusion system where the nonlinearity is an ensemble of scalar hysteresis operators, one defined at each spatial point and operating independently of each other. The individual operators are either solutions an ordinary differential equation with a small parameter, or its singular limit. We prove the well-posedness of the singular limit under very general conditions and show using explicit asymptotics that the singular limit is approximated by the ODE system as the parameter goes to zero.

Abstract of disputation:
Most introductions to probability theory promptly inform the reader that the variance of a probability distribution is a number that represents how much one expects a result to deviate from the average value, and that the normal distribution must be thoroughly studied because it is ubiquitous in applications. But without apriori knowledge of the distribution, why should one focus on these two concepts? Two surprisingly tractable results make a compelling case for the variance and the normal distribution respectively; the weak law of large numbers and the central limit theorem. This lecture will introduce these two results without apriori knowledge of probability theory.

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
PD Dr. P. Gurevich