



Technische Universität Wien  
Institut für Diskrete Mathematik und Geometrie

# Einladung

zu einem

## Vortrag

von

Prof. Alexander Gutermann  
Moscow State University

### *Tropical linear algebra and its applications*

Tropical algebra (sometimes called max algebra) is the set of real numbers with additional symbol,  $-\infty$ , with unusual way to define the operations, namely, the sum of two elements is their maximum, and the product is their sum. Under these operations tropical algebra is an algebraic structure called a semiring. Note that there is no subtraction in this semiring, however addition and multiplication are commutative, associative, and satisfy usual distributivity laws. Tropical algebra naturally appears in modern scheduling theory and optimization. Tropical arithmetic allows to reduce difficult non-linear problems to the linear problems but over tropical algebra. Therefore, to investigate these problems it is necessary to develop linear algebra in the tropical case. The main purpose of our talk is to describe tropical linear algebra and different its applications. We plan to discuss the modern progress in the theory including our recent results.

*This is a joint work with Marianne Akian and Stephane Gaubert.*

**Zeit:** Montag, 23.5.2011, 14.45 Uhr

**Ort:** Dissertantenzimmer

Wiedner Hauptstraße 8-10, 8. Stock, Turm A (grün)

H. Havlicek