OTTO-VON-GUERICKE-UNIVERSITÄT MAGDEBURG
Fakultät für Verfahrens- und Systemtechnik
Der Dekan

Einladung / Invitation

Die Fakultät für Verfahrens- und Systemtechnik lädt alle Interessierten zu 3 Vorlesungen / lectures ein.
Vortragender
Prof. Dr. Dimitar Kamenski (Chemical Engineer)
Rector of the University of Bourgas

1. Vorlesung am Dienstag, 11. April 2006, 9 bis 11 Uhr, G10-110

Application of graph theory for modeling in reaction chemical engineering
- Generation of hypothesis for reaction mechanisms by using kinetic graphs.
- Classification and coding of reaction mechanisms on the basis of kinetic graphs and quantitative evaluation of their complexity.
- Mechanisms analyses and reaction rate models deriving.
- Design of discriminating experiments and discrimination of reaction mechanisms (kinetic graphs) and models.

2. Vorlesung am Mittwoch, 12. April 2006, 9 bis 11 Uhr, G10-110

Estimation of parameters in mathematical (kinetic) models
- Problem definition.
- Estimation by non-linear least square methods.
- A parameter estimation method for rational functions models.
- Parameter estimation in mathematical models represented as differential equations.

3. Vorlesung am Donnerstag, 13. April 2006, 9 bis 11 Uhr G10-110

Applications
- Catalytic epoxidation reaction of alkenes with organic hydroperoxides.
- Model based study of the first stage of biological nitrification biochemical removal of nitrogen in waste water)
- Modeling the catalytic hydro chlorination of etyne.

Recent References:
- Modell based study of the first stage of biological nitrification (NH4+ oxidation to NO2) Environmental Modelling & Software, Volume 19, Issue 5, May 2004, Pages 517-524
- Binary mixture properties: fitting with canonical rational functions Computers & Chemical Engineering, Volume 23, Issue 8, 1 August 1999, Pages 1011-1019
- Overall stability constants: Estimation by non-linear least squares methods Computers & Chemistry, Volume 21, Issue 3, 1997, Pages 167-173
- Parameter estimation in complicated rational functions Computers & Chemistry, Volume 20, Issue 3, September 1996, Pages 331-337
- A parameter estimation method for systems of rational functions Computers & Chemical Engineering, Volume 19, Issue 11, November 1995, Pages 1181-1184

Alle Doktoranden mit Interesse an mathematischer Modellierung und Datenanalyse sowie Studierende im fortgeschrittenen Studium werden ermuntert, an den Vorlesungen teilzunehmen.

Magdeburg, 13. März 2006

Prof. Dr. A. Seidel-Morgenstern
Dekan