



talks

Workshops and Conferences

Physiologically-based pharmacokinetic/pharmacodynamic modelling, mathematical model reduction and a mechanistic interpretation of simple empirical models

Population Approach Group Europe (<http://www.page-meeting.org/>), PAGE 19, Berlin, June 8th-11th, 2010.

Model- based drug development

China-Germany joint conference on "Mathematics and Industry", BMBF/Germany and Academy of Mathematics and Systems Science/China, Beijing/China, March 15th-17th, 2010.

Analysing the pharmacokinetics and pharmacodynamics of drugs in vivo by upgrading in vitro data based on mathematical modelling

Cancer Research Cambridge, Cambridge/UK, February 1st, 2010.

Single Cell PK/PD modelling for Optimizing Therapeutic Antibodies in Cancer Therapy

Pfizer, Sandwich/UK, October 13th, 2009.

Single Cell Pharmacokinetic/Pharmacodynamic modelling for Optimizing Therapeutic Antibodies in Cancer Therapy

SBI, UCD, Dublin/Ireland, October 12th, 2009.

Stochastic Modelling in HIV disease

Workshop on Mathematical Biology, Hausdorff Centre for Mathematics, Bonn/Germany, October 6-8th, 2009.

Global Sensitivity Analysis of Ordinary Differential Equations via solution of the associated PDE problem

NumDiff conference, Halle/Germany, September 14-18th, 2009.



Mathematical modelling in pharmacometrics for supporting the drug discovery and development process

D-BSSE, ETH Zurich, Basel/Switzerland, September 20th, 2009.

Ligand accumulation counteracts therapeutic inhibition of receptor systems

FOSBE Conference, Denver/USA, August 9-12th, 2009.

Physiologically-based pharmacokinetics: Mathematics and good modelling practise

50. Annual meeting of the DGPT, Mainz/Germany, March 9th, 2009.

Identifying the essential dynamics of molecular and cellular systems

Mathematischen Kolloquium, Mathematisches Institut, Universität zu Köln, January 10th, 2009.

Mathematical Modelling in Pharmacometrics: Towards model-based drug development

Mathematical Methods to Analyze Complex Technical and Biological Systems, MPI Dynamics of Complex Systems, Magdeburg, December 2nd, 2008.

Beyond Stability: The Mathematics of Molecular Flexibility in the Context of Virtual Screening

Network Mathematics Graduate Programme, NUIM, July 22nd, 2008.

The pharmacokinetic link to cellular reaction networks

European Conference on Mathematical and Theoretical Biology (ECMTB08), Edinburgh/UK, July 2nd, 2008.

Möglichkeiten und Grenzen der physiologie-basierten Modellierung in der Pharmakokinetik

Coloquium of the Institute of Pharmacy, MLU Halle-Wittenberg, Germany, June 25th, 2008.

Pharmacometrics & Computational Disease Modelling

13. PK/PD-Expertentreffen, Isny, Germany, April 26th, 2008.

Combining Systems Biology with Physiologically Based Pharmacokinetics to Support the Understanding of Drug Effects

FOSBE Conference, Stuttgart, September 9th-12th, 2007.

**Tackling the Chemical Master Equation Directly by Adaptive Discrete Galerkin Methods**

International Conference on Scientific Computation And Differential Equations (SciCADE 07 (<http://scicade07.irisa.fr>)) Saint-Malo, France, July 9-13, 2007.

Metastability in Markovian Systems

University College Cork (UCC), Cork/Ireland, June 28, 2007.

Hybrid Stochastic & Deterministic Models of Biochemical Reaction Kinetics: In Silico Analysis of Flagellar Regulation in E. Coli

Conway Institute, University College Dublin (UCD), Dublin/Ireland, May 11, 2007.

Hierarchical Approach to Physiologically based Pharmacokinetics: Refining Models with Increasing Knowledge

Complex Networks in the Life Sciences, MATHEON and MITACS, the Canadian "Network of Centres of Excellence (NCE) for the Mathematical Sciences", Erkner/Berlin, April 2-4, 2007 (Workshop (<http://mathlife.mi.fu-berlin.de/workshop/>)).

New insight in the drug design and development process by exploiting the potential of PBPK-Modelling, Systems Biology and Scientific Computing

Philips Research Europe – Hamburg (<http://www.philips.com>), December 11, 2006.

Mathematische Modellierung von Medikamentenwechselwirkungen in der Arzneimittelforschung (with B.-F. Krippendorff),

4. Treffpunkt Bioinformatik in Berlin-Brandenburg, BCB (<http://www.bcbio.de/>) , MATHEON (<http://www.matheon.de>) and BioTOP (<http://www.biotop.de>), Berlin, December 5, 2006.

Dynamical low rank approximation of the chemical master equation

Oberwolfach conference "Mathematical and Numerical Aspects of Quantum Chemistry Problems", Mathematisches Forschungsinstitut Oberwolfach (mfo (<http://www.mfo.de>)), October 22-28, 2006.

Modellierung und Simulation in der präklinischen Arzneistoffentwicklung

Jahrestagung der Deutschen Pharmazeutischen Gesellschaft e.V. (DPhG (http://www.krieglstein-marburg.de/DPhG%20-%20Jahrestagung%202006/welcome_eng.html)). Marburg, October 4-5, 2006.

**Mathematical modeling in pharmacokinetics: a modular, physiologically-based approach**

Deutschen Gesellschaft für Medizinische Informatik, Biometrie und Epidemiologie (GMDS
(<http://www.gmds.de/>)). Leipzig, September 11-13, 2006

Deterministic models of chemical reactions coupled to stochastic reaction kinetics for efficient simulation of cellular systems

11th Seminar NUMDIFF, Halle, September 4-8, 2006 (Conference
(<http://sim.mathematik.uni-halle.de/numdiff/Numdiff11/>)).

Adaptive approach for non-linear sensitivity analysis of dynamical systems with application to systems pharmacokinetics

Hamilton Institute (<http://www.hamilton.ie>), June 13, 2006.

Combining PBPK-Modeling, Systems Biology and Scientific Computing for New Insight in the Drug Development Process

11. Pharmakokinetik/Pharmakodynamik-Expertentreffen, Berlin, May 5-6, 2006 (Conference
(<http://www.pkpd-expertentreffen.de>)).

Computational Physiology

BioClub Meeting, Freie Universität Berlin. April 25, 2006.

Mathematical modelling and simulation for new insights in the drug development process: A hierarchical approach to systems pharmacokinetics

Status seminar, Berlin Center for Genome Based Bioinformatics (BCB), March 1, 2006, (BCB
(<http://www.bcbio.de/>)).

Solving the chemical master equation for monomolecular reaction systems analytically - and beyond

Frankfurter Stochastik-Tage 2006, Frankfurt, March 14-17, 2006
(Conference (http://stoch2006.math.uni-frankfurt.de/index_en.html)).

Adaptive simulation of hybrid stochastic and deterministic models for biochemical systems

Hahn-Meitner-Institut (HMI), Berlin, November 17, 2005.

A generic PBPK model as a first step towards in silico disease modelling

1st BioSim conference, Mallorca, Spain, October 6-8, 2005
(Conference (<http://www.imedea.uib.es/public/biosim/>)).

**Averaging of fast time scales in the presence of metastability**

Potsdam Workshop on Numerical Methods in Climate and Weather Prediction, September 30, 2005 (Workshop (<http://users.math.uni-potsdam.de/~wensch/wetter/announce.html>)).

Mathematik und Lebenswissenschaften - lässt sich der Mensch im Computer simulieren?

Vortrag vor Schülern der Klassenstufe 12 des Albert-Schweitzer-Gymnasiums Gera, FU Berlin, September 15, 2005.

Hierarchische Modellierung physiologischer Prozesse zur Vorhersage und Einsicht in die Pharmakokinetik potentieller Wirkstoffe

Forschungsinstitut für Molekulare Pharmakologie (FMP (<http://www.fmp-berlin.de/>)), Berlin-Buch, March 01, 2005.

Coupling stochastic and deterministic models for efficient simulation of cellular processes

DFG Research Center MATHEON, Berlin (MATHEON (<http://www.matheon.de/>)), January 28, 2005.

Exact simulation of hybrid stochastic and deterministic models for biochemical systems

Oberseminar Numerische Mathematik/Scientific Computing, Berlin (Oberseminar (<http://www.math.fu-berlin.de/rd/we-02/numerik/SEMINAR/archive.html>)), January 14, 2005.

Metastability and Dominant Eigenvalues of Transfer Operators

Graduiertenkolleg Strukturbildungsprozesse, Bielefeld (Graduiertenkolleg (http://www.mathematik.uni-bielefeld.de/~fspm_gk/)), November 25, 2004

Physiologie-basierte Pharmakokinetik-Modellierung in der Leitstruktur-Optimierung

Revotar Biopharmaceuticals AG (<http://www.revotar.de/>), Henningsdorf/Berlin, November 18, 2004.

Physiologie-basierte Modelle in der Pharmakokinetik

Interdisziplinäre Tagung "Wissenschaftliches Modellieren - Ansprüche und Kriterien im Zuge der Theoriebildung", veranstaltet von der Forschergruppe "Wissensformate: Information, Kommunikation, Repräsentation" und SFB 611 "Singuläre Phänome und Skalierung in mathematischen Modellen", Bad Honnef, November 12-13, 2004 (Tagung (http://www.kwz.uni-bonn.de/Tagung_Modellieren/)).

Systems biology integrated into physiologically based pharmacokinetics

5th International Conference on Systems Biology (ICSB2004), Heidelberg, October 09-13, 2004 (Conference).

**Adaptive approach to parameter variability in physiological processes**

Jahrestagung der Deutschen Mathematiker-Vereinigung, Heidelberg, September 12-17, 2004 (Conference (<http://dmv2004.uni-hd.de/>)).

Macroscopic effects of fast degrees of freedom exhibiting long-term correlations

Algorithms for Macromolecular Modelling IV, Leicester, United Kingdom, August 18-21, 2004 (Conference (<http://www.am-3.org/>)).

A computational approach to macroscopic behaviour of molecular dynamics

CEMRACS2004: Mathematics and Applications in Biology and Medicine, CIRM, Marseille, France, September 8-13, 2004 (Summer school and research center (<http://smai.emath.fr/cemracs/cemracs04/index.php>)).

Mathematik im Medikamenten-Design

Lange Nacht der Wissenschaften 2004 (FU Berlin, FB Mathematik und Informatik), Berlin, June 12, 2004 (Lange Nacht (<http://www.inf.fu-berlin.de/LangeNacht/Indw2004/>)).

Metastabilität als Konzept zur Beschreibung wesentlicher dynamischer Effekte

DFG-Forschungszentrum DFG Research Center MATHEON, Berlin, June 11, 2004 (Tandem-Workshop Stochastik-Numerik (<http://www.mathematik.hu-berlin.de/~winkler/tandemws.html>)).

The use of in vitro data for the toxicological risk assessment

together with Ursula Gundert-Remy (BfR, Germany). COST B15 final conference "In silico driven drug discovery and development: The integration of modelling and simulation throughout the discovery and development processes"

Geneva, Switzerland, May 26-28, 2004 (Conference (<http://www.symporg.ch/conferences/2004/Cost2004/>)).

Mathematische Modellierung in der Pharmakokinetik

Ringvorlesung "Rechnen in der Wissenschaft", Fachbereich Mathematik und Informatik der FU Berlin, May 19, 2004.

Molecular Flexibility in the Context of Virtual Screening

Indian-German-Workshop "Bioinformatics and Proteomics", Harnack-Haus, Berlin, September 18-19, 2003.

On the Effects of Fast Degrees of Freedom on Macroscopic Dynamical Behavior

LMS Durham Symposium: Markov Chains, University of Durham, United Kingdom, (Symposium



(http://www.maths.dur.ac.uk/php/lms.php?meeting_name=MC&job=webpage), July 25 - August 04, 2003.

Avoid the critical slowing down - identify metastability before you get trapped, Part I (Part II by Frank Cordes, ZIB)

SciCADE 2003: International Conference on Scientific Computation and Differential Equations, Trondheim, Norway. (Conference (<http://www.math.ntnu.no/scicade/>)), June 30 - July 04, 2003.

Beyond stability - computational identification of macroscopic fluctuations in molecular ensembles

Status seminar, Berlin Center for Genome Based Bioinformatics (BCB), March 12, 2003, (BCB (<http://www.bcbio.de/>)).

A Computational Approach to the Large Scale Behaviour of Molecular Dynamics

AMAM 2003 Conference on Applied Mathematics and Applications of Mathematics, Nice, France, February 11, 2003, (Conference (<http://acm.emath.fr/amam/>))

Zu Risiken und Nebenwirkungen fragen Sie ihren Mathematiker

Eröffnungsveranstaltung des DFG-Forschungszentrums "Mathematik für Schlüsseltechnologien", TU Berlin, Germany, November 20, 2002, (TU-Pressstelle (<http://www.tu-berlin.de/presse/www-info/2002/www88.htm>), Presstext (<http://page.mi.fu-berlin.de/~huisinga/talks/FZT86presstext.pdf>))

Macroscopic Dynamics in Molecular Systems: Transition Probabilities and Exit Rates

Almost02 "Workshop on Efficient Algorithms for Multiscale Dynamics", FU Berlin, Germany, September 24, 2002, (Workshop (<http://www.math.fu-berlin.de/~biocomp/workshops/almost02>))

Macroscopic Dynamics in Stochastic Systems - Transition Probabilities and Exit Rates

BERLINER KOLLOQUIUM Wahrscheinlichkeitstheorie, HU Berlin, Germany, February 15, 2002.

Extracting Macroscopic Stochastic Dynamics: Theory, Model Problems and Numerics

MPI "Physik komplexer Systeme", Dresden, Germany, February 20, 2002.

Die Wignertransformation und ihre Anwendung am Beispiel der Schrödinger-Gleichung

Disputationsvortrag am Fachbereich Mathematik und Informatik der FU Berlin, November 07, 2001.

Metastability of Markovian systems - The Mathematical Foundations

First SIAM-EMS Conference "Applied Mathematics in our Changing World", Berlin, Germany, September 05,



2001, (Conference (<http://www.zib.de/amcw01/>))

Metastability of Markovian systems - a transfer operator approach in application to molecular dynamics

Workshop on Atomistic to Continuum Models for Long Molecules and Thin Films, Monte Verita, Ascona, Switzerland, July 20, 2001, (Workshop (<http://lcvmwww.epfl.ch/~lcvm/ascona2001/index.html>))

Towards the identification of essential degrees of freedom

2. Kolloquium des SPP Analysis, Modellierung und Simulation von Mehrskalensystemen, Röttgen, Bonn, Germany, July 03, 2001)

Markov Chains and Metastability

Probability Seminar, Mathematical department at University of Warwick, Warwick, UK, March 14, 2001.

Metastable behaviour of Markov processes induced by Langevin models

Third International Workshop on Methods for Macromolecular Modelling, New York, USA, October 14, 2000

Biomolecular conformations as metastable sets of specific Markov chains

With Ch. Schütte. Thirty-Eight Annual Allerton Conference on Communication, Control, and Computing, Monticello, USA, October 06, 2000 (Conference (<http://tesla.csl.uiuc.edu/allerton/>))

Transfer Operatoren und metastabile Dynamik

21. Norddeutsches Kolloquium über Angewandte Analysis und Numerische Mathematik, Berlin, Germany, May 19, 2000, (Kolloquium (<http://www.math.tu-berlin.de/~noko21/>))

Metastable behaviour of Markov processes induced by Langevin models

Workshop on Transfer Operators, Paderborn, Germany, March 06, 2000, (Workshop)

Konformationsanalyse von Biomolekülen

CeBIT Ausstellungsstand am Forschungsmarkt Berlin, Hannover, Germany, February 26-27, 2000.