talks

Workshops and Conferences

Intregrating cell-level kinetics into pharmacokinetic models to predict the effect of anti-HIV drugs in vivo
Minisymposium: How mathematics illuminates biology, 6th European Congress of Mathematics, Krakow/Poland, July 2nd-7th, 2012.

Non-linear mixed effect modeling in pharmacokinetics and cognitive sciences: towards merging data-driven and mechanistic modeling approaches
Workshop on Bayesian Data Integration and Assimilation, Universitaet Potsdam, March 19th, 2012.

Hybrid stochastic-deterministic approach to directly solve the chemical master equation based on multiscale expansion
Workshop on the Numerical Solution of the Chemical Master Equation in Molecular Biology, Institute of Advance Studies/TU Munich, September 12h, 2011.

Integrating cell-level kinetics into pharmaockinetic models for optimizing the inhibitory effect of therapeutic proteins in cancer therapy
Institute Day, MPI Molecular Plant Physiology, Potsdam, June 27th, 2011.

Variability, uncertainty and noise in kinetic models of biochemical reaction networks
GoForSys-Seminar, Univeristaet Potsdam, February 25th, 2011.

Methods of mathematical modeling in drug discovery from plants: Possibility and potentials
1sr Brazilian-German Meeting of Plant Systems Biology and Bioenergy, Receife/Brazil, November 25th-26th, 2010.

Global Sensitivity Analysis of ODEs via solution of the associated Fokker-Planck equation
6th International Workshop on Computation of Biochemical Pathways and Genetic Networks, Univeristaet Heidelberg, September 16th-17th, 2010.

Physiologically-based pharmacokinetic/pharmacodynamic modelling, mathematical model reduction

and a mechanistic interpretation of simple empirical models
Population Approach Group Europe, 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, Univerität 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 Stabililty: 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/lndw2004/)).

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-Pressestelle (http://www.tu-berlin.de/presse/www-info/2002/www88.htm), Pressetext (http://page.mi.fu-berlin.de/~huisinga/talks/FZT86pressetext.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 Mehrskalenproblemen, 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.

http://compphysiol.math.uni-potsdam.de/