

CV of Dr. D. Battogtokh

Name Dorjsuren Battogtokh (M)

Date of Birth 26 Aug 1963

Nationality Mongolia

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Marital Status Married, Son(17), Daughter(7)

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Languages English(fluent), Russian(fluent), German(fair), Japanese(fair), Mongolian(native)

Education 1982-1988 Department of Physics, Lomonosov Moscow State University, Diploma Thesis "Cellular Automata Model for Excitable Media". Advisor Prof. A. S. Mikhailov
1992-1995 Department of Physics, Lomonosov Moscow State University, Ph.D. Thesis, "Turbulence and Dissipative Structures in Oscillatory Media with Global Coupling". Advisor Prof. A. S. Mikhailov

Employment 1988-1990, Institute for Biotechnology, Mongolian Academy of Sciences, Ulaanbaatar, research associate
1990-1992, Institute for Mathematics, Mongolian Academy of Sciences, Ulaanbaatar, research associate
1994-1996, Department of Physical Chemistry, Fritz Haber Institute of the Max Planck Society, Berlin, Germany, visiting scientist (Volkswagen Foundation Fellow and a research Fellow of Max Planck Society)
1997-1999, Department of Physics, Graduate School of Science, Kyoto University, Kyoto, Japan, Postdoctoral Fellow of Japan Society for Promotion of Sciences
1999- 31 March 2000, Department of Physics and Astronomy, Louisiana State University, Baton Rouge, 70803 Louisiana, Postdoctoral research associate
Apr. 2000-Nov. 2000, Physics and Technology Institute, Mongolian Academy of Sciences, Ulaanbaatar 51, Mongolia, Head of Biophysics and Spectroscopy Department
2000-2002, Center for Simulation Physics, Department of Physics and Astronomy, the University of Georgia, Athens, 30602, GA, postdoctoral research associate
2002-continued, Department of Biology, Virginia Tech, Blacksburg, 24060 VA, postdoctoral research associate

Teaching experience 1989-1990, Mathematical Biology, two semester course, Biology Department of the Mongolian State University, Ulaanbaatar
1990-1991, Theory of Solid State, two-semester course, Physics Department of the Mongolian State University, Ulaanbaatar

2000, Nonlinear Dynamics, the Technology Department of the Mongolian Pedagogical University, Ulaanbaatar.

Research experience Turbulence and pattern formation in reaction-diffusion systems
kinetics of biochemical reactions
cellular automata and neural network models
Monte Carlo simulations

Programming experience Mathematica
FORTRAN, C, IDL, PV-WAVE, PASCAL
UNIX, LINUX
Complex computer visualizations(see my computer videos at
<http://www.FHI-Berlin.MPG.DE/~complsys/>)
Parallel computing with MPI

Awards and Fellowships Diploma of the Mongolian Physics Olympiad 1979
Volkswagen Foundation Fellowship for PhD 1994
Max Planck Society Stipendium 1996
JSPS(Japan Society for Promotion of Sciences) Fellowship 1997
The Outstanding Young Researcher Award of the Mongolian Academy of Sciences 1998

Seminars and Conferences (since 1996)

Seminar on Simulation Physics(D. P. Landau), University of Georgia, 2002, "Studying QA gene regulation network with ensemble method", talk

Seminar on Simulation Physics(D. P. Landau), University of Georgia, 2002, "Front Turbulence in Forced Oscillators", talk

Dynamic Days 2002, Baltimore, USA, "Turbulence in Nonlocally Coupled Phase Oscillators", poster

Seminar on Simulational Physics(D. Landau), University of Georgia, 2000, "Multi Scaled Turbulence in Large Populations of Oscillators", talk

Seminar on Nonlinear Dynamics, Mongolian State University, 2000, "Turing Hopf mixed mode solution in Nonlocally Coupled Complex Ginzburg-Landau Equation", talk

National Meeting of the American Chemical Society, New Orleans, 1999, "Cellular Train", talk

Nonlinear Physics Seminar, (Prof. Y. Kuramoto), Kyoto University, Kyoto 1999, "Coexistence of Coherence and Incoherence in Nonlocally Coupled Phase Oscillators", talk

Centennial Meeting of the American Physical Society, Atlanta, 1999, "Multiaffine Chemical Turbulence", talk

Seminar on Chaos in Dynamical Systems (K. Kaneko and S. Sasa), Department of Pure and Applied Science, University of Tokyo, 1999, "Phase Jumps and Phase Turbulence in Nonlocally Coupled Systems", talk

EC Summer School on Multifractals -Mathematics and Applications, 1999, I. Newton Institute for Mathematical Sciences, Cambridge, UK, "Multi-affine Chemical Turbulence", talk

Winter School on Time Series Analysis, Dresden, Germany, 1998, "Bubbling in reaction diffusion systems", poster

Seminar on Self-Organization (Prof. W. Ebeling and L. Geyer- Schimansky), Humboldt University, Berlin, Germany, 1998, "Multifractal and power law scaling turbulence in reaction diffusion systems" ,talk

Seminar on Reaction-Diffusion Systems, (Prof. M. Mimura,) , Department of Mathematics, University of Tokyo, Japan, 1998, "Lyaponov exponents of diffusively coupled Roessler oscillators ,and the Brusselators" , talk

Nonlinear Physics Seminar, (Prof. Y. Kuramoto), Kyoto University, Kyoto 1997, "Localized and cellular structures in oscillatory systems", talk

Seminar on Solid State Physics, Moscow State University, Moscow 1997, "Dissipative structures in CO oxidation on platinum single crystals", talk

Conference in Complex Dynamics in Chemistry and Biology, Odence, Denmark, 1996, "Controlling turbulence in the complex Ginzburg-Landau equation" , poster

Control and Nonlinear Control of Chaos, International Center for Theoretical Physics, Trieste, Italy, 1996, "Time-delay control of spatiotemporal chaos" , talk

Seminar in Self-Organization in Macroscopic Systems(Prof. E. Schoel), Technical University of Berlin, 1996, "Simulations of globally coupled complex Ginzburg-Landau equation" , talk

References

1. Prof. Y. Kuramoto

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2. Prof. A. S. Mikhailov

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3. Prof. J. Arnold

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4. Prof. H. B. Schuttler

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3. Prof. J. J. Tyson

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phone: 540 231 4662
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Publication list of Dr. Battogtokh

- D. Battogtokh and J. J. Tyson, "Bifurcation Analysis of A Budding Yeast Cell Cycle Model", preprint, to be submitted
- D. Battogtokh and B. Davaanyam, "Nonlinear Effects in Site Blocking Induced Oscillations", arXiv:condmat/0303019
- Y. Kuramoto and D. Battogtokh, "Coexistence of Coherence and Incoherence in Nonlocally Coupled Phase Oscillators", *Nonlinear Phenomena in Complex Systems*, 5:4, 380, 2002
- D. Battogtokh, "Front Instabilities in A Forced Oscillatory Medium with A Global Coupling", *Phys. Rev. E.*, 66, 066202, 2002
- D. Battogtokh, H.B. Schuttler, "Turbulence in Nonlocally Coupled Phase Oscillators", *Physics Letters A*, 299, 558, 2002
- Arnold, J. H.-B. Schuttler, D. Logan, D. Battogtokh, . et. al. , "Metabolomics", to appear in *In Handbook of Industrial Mycology*. Marcel Dekker, NY
- D. Battogtokh, D. K. Asch , et. al.," An Ensemble Method for Identifying Regulatory Circuits with Special Reference to the QA gene Cluster of *Neurospora Crassa*", *PNAS USA*, 99, 16904, 2002
- Y. Kuramoto, H. Nakao, D. Battogtokh, "Multiscaled Turbulence in Large Populations of Oscillators in Diffusive Medium", 288, *Physica A*, 244, 2000
- D. Battogtokh and D. Browne, "Cellular Train" , *Physics Letters A*, 266, 358, 2000
- D. Battogtokh, "Pattern Formation in Nonlocally Coupled Oscillators", *Prog. Theor. Phys.*, 1999, 102, 947
- D. Battogtokh, Y. Kuramoto "Turbulent Regimes of Nonlocally Coupled Oscillators In the Benjamin Feir Stable Region", *Phys. Rev. E*, 2000, 61, 3227
- Y. Kuramoto, D. Battogtokh, H. Nakao "Multiaffine Chemical Turbulence", *Phys. Rev. Lett.*, 1998, 81, 3543
- D. Lima, D. Battogtokh, A. Mikhailov, P. Borckmans, G. Dewel, "Pattern Selection in Oscillatory Media with Global Coupling" , *Europhysics Letters*, 1998, 42, 631
- D. Battogtokh, A. Preusser, A. Mikhailov, "Controlling Turbulence in the Complex Ginzburg-Landau Equation II", *Physica D*, 1997, 106, 327
- D. Battogtokh, M. Hildebrand, K. Krisher, A. S. Mikhailov, "Nucleation kinetics and global coupling in reaction-diffusion systems", *Physics Reports* 1997, 288, 435
- K. S. Rose, D. Battogtokh, A. Mikhailov, R. Imbuhl, A. Bradshaw, "Cellular Structures in Catalytic Reactions with Global Coupling", *Phys. Rev. Lett.*, 1996, 76, 3582
- D. Battogtokh, A. Mikhailov, "Controlling Turbulence in the Complex Ginzburg Landau Equation", *Physica D*, 1996, 90, 84
- E. E. Selkov, T. Chuluun and D. Battogtokh, "Multiresonance phenomena in an open enzymic reaction", *Studia Biophysica*, 1991, 31, 137
- D. Battogtokh, A. Preusser, A. Mikhailov, Localized turbulence and cellular structures in systems with global

coupling, in *Nonlinear Physics of Complex Systems* (eds. J. Parisi, S. C. Muller and W. Zimmermann, Springer, 1996), pp 149-165

D. Battogtokh, Ph.D. Thesis, "Turbulence and Dissipative Structures in Oscillatory Media", Moscow University, 1995

D. Battogtokh and A. Mikhailov, Controlling Turbulence in the Complex Ginzburg Landau Equation, Proc. Int. Conf. "Complex Dynamics in Chemistry and Biology, Odense, Denmark, 1996, 24

D. Battogtokh, A. Clough, R. Vincent, A. Goldbeter, "The Mitotic Oscillator Driving Cell Division Cycle", Proc. Workshop in Mathematical Biology, "Nonlinear Pattern Formation Modelling in Medicine and Biology", Abbaye de Fontevraud, 1993, 26

D. Battogtokh, "Monte Carlo Simulation of Multilayer Hopfield Model", Proc. Inst. Exper. Theor. Biol. 25, 38, 1992

E. E. Selkov, T. Chuluun and D. Battogtokh, "A study of resonance characteristics and chaos of a reaction chain, where first reaction is inhibited by the last product", Proc. Inst. Exper. Theor. Biol. 24, 22, 1991

J. Baasanjav, D. Battogtokh, "Estimations of biomass of some fishes in Lake Buir by mathematical modeling", Proc. Inst. Exper. Theor. Biol. 23, 41, 1990

D. Battogtokh, A. Mikhailov, "Autowaves in an active medium formed by cellular automata", Proc. Inst. Exper. Theor. Biol. 22, 7, 1989

Technical reports, etc..

D. Battogtokh, "Artificial Intelligence", 1991, Mongolian Popular Science Journal, 122

D. Battogtokh, "Cellular Automata and Models of Heart", 1990, Mongolian Popular Science Journal, 55

D. Battogtokh, "Stochastic Resonance and Modelling of Brain", 1989, Mongolian Popular Science Journal, 19