

Yernur Baibolatov

PHYSICIST · PHYSICS TEACHER

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“Make the change that you want to see in the world.”

Education

KazNU(Kazakh National University)

Almaty, Kazakhstan

DIPLOMA IN PHYSICS

Sep. 2001 - Jul. 2006

- Graduated as a Physicist and Physics Teacher
- Title of the Diploma: “**Encryption of digital images using Dynamical Chaos Generators**”
- Diploma supervisor: Prof. Zeinulla Zhanabaev, KazNU, Kazakhstan

Scientific Experience

Laboratory of Nonlinear and Stochastic Processes, IETP

Almaty, Kazakhstan

RESEARCHER

Jul. 2006 - Dec. 2008

- Analyzed the behaviour of nonlinearly coupled phase oscillators and Kuramoto models
- Developed numerical programs to analyze oscillator ensembles

Nonlinear Dynamics and Statistical Physics Group, Potsdam University

Potsdam, Germany

RESEARCHER

Dec. 2008 - Sep. 2009

- Performed analytical and numerical analysis of nonlinearly coupled phase oscillator ensembles
- Performed stability analysis and bifurcation analysis of nonlinear mean field differential equations

Theoretical Physics, Planetology Group, Potsdam University

Potsdam, Germany

PH.D. CANDIDATE

Feb. 2010 - PRESENT

- Worked on kinetic description of planetary rings
- Developed Molecular Dynamics (MD) and Monte-Carlo (DSMC) simulations of adhesive granular gases
- Performed statistical analysis of aggregates formed in granular gases
- Analyzed energy fluxes in polydisperse granular gases
- Analyzed transport coefficients in polydisperse granular gases

Teaching Experience

KazNU (Al-Farabi Kazakh National University)

Almaty, Kazakhstan

TEACHING ASSISTANT

Jul. 2006 - Dec. 2008

- Seminars and Laboratories: Digital Signal Processing, Radioelectronics, Digital Electronics
- Lectures and Seminars: Introduction to LaTeX, C/C++ and MatLab

Potsdam University

Potsdam, Germany

TEACHING ASSISTANT

Sep. 2013 - Dec. 2013

- Seminars on Statistical Physics and Kinetics

Publications

- | | | |
|------|---|--|
| 2009 | Yernur Baibolatov, Michael Rosenblum, Zeinulla Zh. Zhanabaev, Meyramgul Kyzgarina and Arkady Pikovsky , Periodically forced ensemble of nonlinearly coupled oscillators: From partial to full synchrony | <i>Physical Review E</i>
80 , 046211 |
| 2010 | Yernur Baibolatov, Michael Rosenblum, Zeinulla Zh. Zhanabaev and Arkady Pikovsky , Complex dynamics of an oscillator ensemble with uniformly distributed natural frequencies and global nonlinear coupling | <i>Physical Review E</i>
80 , 016212 |
| 2012 | Yernur Baibolatov and Frank Spahn , The role of adhesion for ensembles of mesoscopic particles | <i>Granular Matter</i>
14 (2), p.197-202 |

Conferences and Workshops

Nonlinear Waves

POSTER PRESENTATION

- Stochastic Characteristics of Dynamical Chaos Generators

Nizhny Novgorod, Russia

Mar. 2006

Dynamic Days

POSTER PRESENTATION

- Periodically forced ensembles of nonlinearly coupled phase oscillators

Göttingen, Germany

Aug. 2009

Planetary Rings Workshop

ORAL PRESENTATION

- Estimation of restitution coefficient in granular gases

Hamburg, Germany

Mar. 2010

Planetary Rings Workshop

ORAL PRESENTATION

- Force based molecular dynamics code as a tool to investigate adhesive granular gases

Spreewald, Germany

Aug. 2011

DPS (Division for Planetary Sciences)

POSTER PRESENTATION

- The role of adhesion in the formation of aggregates in planetary rings

Reno NV, USA

Nov. 2013

EPSC (European Planetary Science Congress)

POSTER PRESENTATION

- Energy fluxes in polydisperse granular gases

Cascais, Portugal

Sep. 2014

Granular Matter Workshop

PARTICIPANT

Erlangen, Germany

Mar. 2015

EPSC (European Planetary Science Congress)

ORAL PRESENTATION

- Breakage of energy equipartition in polydisperse granular media

Nantes, France

Sep. 2015

Personal Information

Place of Birth

DATE OF BIRTH

Taraz, Kazakhstan

22 Mai 1984

Language Skills

- **Kazakh, Russian** - Native
- **English** - Fluent
- **German** - B1 level

Programming Skills

- Numerical simulations in C/C++, Python, Julia and MatLab