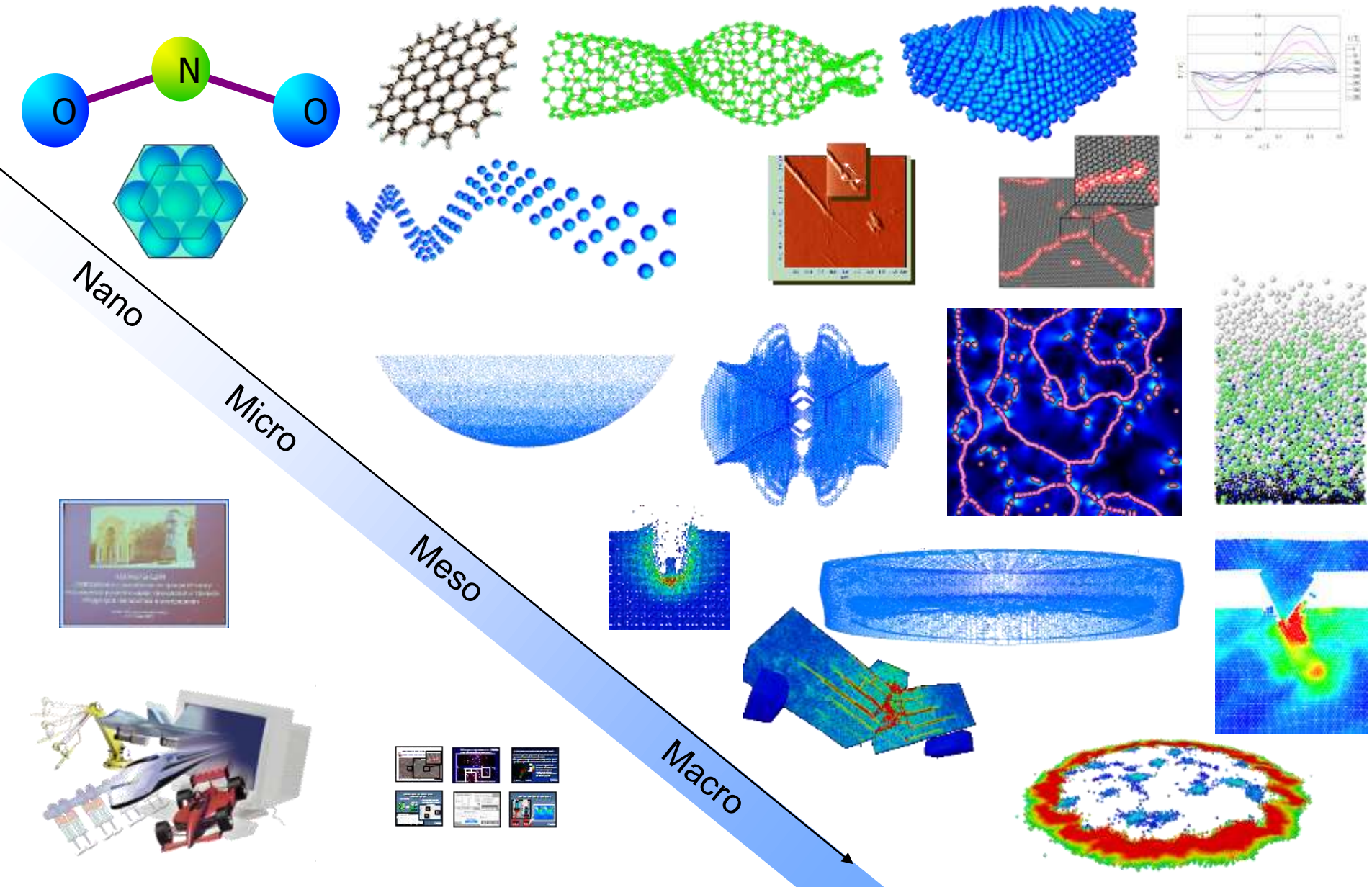


Department of Theoretical Mechanics

International Collaboration

Department “Theoretical mechanics”: research projects



Partner universities



Technische Universität Hamburg-Harburg



UNIVERSITY
OF ABERDEEN



University
of Glasgow



JOHANNES KEPLER
UNIVERSITÄT LINZ | JKU



Department “Theoretical Mechanics”: customers and partners





Alpine Replay



- Social network for skiers and snowboarders
- Partners: HARRIS, AlpineReplay
- 3 US patents
- > 200 000 users!
- 600 ski resorts



The Best App GooglePlay
(January, 2013)



Project web site: tm.spbstu.ru/AlpineReplay

Strategic Partnership with Leibniz University Hannover



Institute of Applied Mathematics and Mechanics	Faculty of Civil Engineering and Geodesy
Prof. Dr.-Sci. Anton Krivtsov	Prof. Dr.-Ing. Udo Nackenhorst
Head of Department of Theoretical Mechanics	Head of the Institute of Mechanics and Computational Mechanics
Department of Theoretical Mechanics Institute of Applied Mathematics and Mechanics St. Petersburg State Polytechnical University	Institut für Baumechanik und Numerische Mechanik Leibniz Universität Hannover

A joint German-Russian research group headed by two principal investigators (Prof. Nackenhorst and Prof. Krivtsov) develops novel and innovative analytical and computational techniques for scale bridging down from the molecular dynamics (MD) approach over statistically averaged particle methods (DEM) and sophisticated finite element methods (X-FEM) up to structural mechanics and environmental systems applications.



International MSc Program “Advanced Dynamics of Discrete and Continuum Systems”

Objective of the programme

To prepare the highly skilled scientists and engineers with a deep theoretical background and practical experience in theoretical mechanics, computational mechanics, IT, mathematical modelling and simulations, and distributed computing.

Key advantages

- The graduated students have a chance to get an interesting and a well-paid job at the research institutes, centres and labs. Also they can work at R&D and engineering departments of oil and gas, automotive, power and engineering, aerospace and other companies.
- Combining of discrete and continuum methods allows a wide range of applications including mechanical, physical, biological, social, and economical systems where the dynamical processes are involved.
- The programme offers a unique opportunity for joint study of Russian students with students from other countries, the opportunity to participate together in academic and extracurricular activities of SPbSPU.

International Conference “Advanced Problems in Mechanics”



June 30 – July 5, 2014, St. Petersburg, Russia

The International Conference “Advanced Problems in Mechanics — 2014” is organized by St. Petersburg State Polytechnical University and the Institute for Problems in Mechanical Engineering of the Russian Academy of Sciences ([IPME RAS](#)) under the patronage of the Russian Academy of Sciences (RAS).

MAIN TOPICS

- mechanics of media with microstructure
- nanomechanics
- molecular and particle dynamics
- phase transitions
- computational mechanics
- wave motion
- aerospace mechanics
- nonlinear dynamics, chaos and vibration
- dynamics of rigid bodies and multibody dynamics
- solids and structures
- fluid and gas
- mechanical and civil engineering applications

Academic Mobility

- 2 DAAD Fellowships “Mikhail Lomonosov” for young scientists of Theoretical Mechanics Department (2012, 2014)
- 9 DAAD Fellowships “Leonard Euler” for students of Theoretical Mechanics Department (2010-2013)
- 2 student internships supported by DFG grant of strategic partnership between SPbSPU and LUH (2013, 2014)
- 3 foreign students passed the internship at Theoretical Mechanics Department (2010-2012)