



German-Russian Workshop  
**Contact Mechanics and Friction**

Technische Universität Berlin

October 5-8, 2009

**Organizers:** Prof. Dr. Valentin Popov and Prof. Dr. Sergey Psakhie

**Objectives:** Contact mechanics and friction is an interdisciplinary research field with applications ranging from atomic force microscopy over the huge field of traditional tribology to earthquakes and medicine. Friction arises as interplay of elasticity, elastoplasticity, rheology, adhesion, lubrication, phase transitions, chemical reactions, wear and many other processes at and under the surfaces of contacting bodies. Surface topography and surface interactions are as important for contact and friction properties as bulk material properties; the processes on the atomic scale may be as important as the dynamics of the whole tribological system. In short, contact mechanics and friction are multi-aspect and multi-scale problems.

The Workshop is devoted to synthetic, multi-disciplinary aspects of contact mechanics and friction physics as well as their applications in natural sciences, engineering, biology and medicine. The purpose of the Workshop is to bring together specialist of different branches of tribology, physics, engineering and biology to discuss the interplay of the main governing processes in contact mechanics as well as its applications in engineering, bionics and medicine.

### Topics

- Contact mechanics of real surfaces with measured topography
- Contact mechanics of heterogeneous systems and coatings
- Contact mechanics and wear
- Contact mechanics with adhesion
- Adhesion and capillarity in micromechanical devices and biological systems
- Influence of adhesion on friction and wear
- Mixed lubrication and boundary lubrication
- Cavitation in frictional contacts and its influence on friction and wear
- Thermal effects in contacts
- Numerical methods for calculating contact properties
- Friction laws with internal parameters
- Numerical simulation methods for calculating friction
- High resolution measuring methods in tribology
- Novel tribological systems
- Historical aspects of contact mechanics and friction related to the modern developments

### Call for papers

If you are interested in the participation, please submit an abstract in English not later than July 31, 2009 (preferably by e-mail).

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