

Einladung zum Physikalischen Kolloquium

**Montag, 29.11.2010,
16.15 Uhr, H2 (025)**



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Materialsimulation

**Mechanismen der Reibung
zwischen Festkörpern:**

**Von geometrischer Verzahnung über Falten und spontanem
Symmetriebruch bis hin zur Chemie**

Solid friction tends to change with velocity rather slowly, i.e., significantly less than linearly with velocity. It has long been recognized that the origin for this deviation from linear response theory must be due to microscopic hystereses or instabilities. In particular Prandtl showed more than 80 years ago in a simple albeit generic model system, why Coulomb friction is indicative for a system to be out of thermal equilibrium and how thermal noise reduces friction. Despite this insight, the precise nature of the instabilities for specific systems is often unclear. In my talk I will review some of recent advances made in identifying relevant mechanisms from chemical bond breaking to instabilities in boundary lubricants and the friction of wrinkles.