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## “Atomic friction”

*Prof. Dr. Ernst Meyer*  
*Department of Physics, University of Basel, Switzerland*

Friction is an old phenomenon, which is still poorly understood from a fundamental point of view. Experiments, based on advanced force microscopy, give the opportunity to study friction on the nanometer scale. Novel phenomena, such as atomic stick-slip, are observed. Atomic friction is studied on surfaces, such as ionic crystals or layered materials. Superstructures, as observed with KBr films on NaCl, show a rather strong influence on atomic friction. The transition from atomic-scale stick slip to continuous sliding, also called the transition to superlubricity, is presented and applied to control friction. Therefore, atomic friction can be switched on and off. The origins of energy dissipation, either electronic or phononic, are to be discussed. An example is the dissipation measurement across a superconductor phase transition, where a large contribution from electronic friction is observed.