



# Seminar

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## Science enabled by the dust accelerator operated at CU-Boulder

The dust accelerator facility at the University of Colorado was commissioned in 2011. It employs a 2 MV electrostatic generator and can produce micron and submicron sized dust particles with up to 10 km/s velocities. This new capability enabled the development and calibration of space instruments and a number of unique science investigations. In this talk, I will present results from the laboratory simulation of (a) micrometeoroid ablation and (b) effects of dust impacts on spacecraft.

Many tons of extraterrestrial material fall into Earth's atmosphere every day in the form of micrometeoroids of cometary and asteroidal origin. These particles completely or partially ablate in the atmosphere and the ablation products play a role in a number of phenomena, including the observed meteor trails, metal layers, or the formation of noctilucent clouds. However, the understanding of the microphysics of the ablation process is incomplete and significant uncertainties remain. The interpretation of meteor measurements, for example, has been called into question, and is important for the understanding of the micrometeoroid complex in our solar system. An experimental setup is designed to simulate the ablation process in well-defined laboratory conditions. The ablation takes place in a gas cell over a short distance.