

The 3MV dust accelerator at the Colorado Center for Lunar Dust and Atmospheric Studies

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Abstract. Laboratory facilities that can simulate the lunar environment are necessary to study micrometeorite impact processes, space weathering, and perform instrument calibrations. A 3MV electrostatic dust accelerator has been constructed and commissioned at the Colorado Center for Lunar Dust and Atmospheric Studies (CCLDAS) to help fulfill this need. The facility is capable of accelerating dust particles to >10 km/s. The target chamber for the accelerator can be fitted with a solar wind simulator and UV lamps to simulate the sun. In particular, the Lunar Dust Experiment (LDEX) flying on the Lunar Atmosphere and Dust Environment Explorer (LADEE) will be partially calibrated at this facility. The presentation will focus on the operation principle and capabilities of the accelerator, and review the ongoing experiments and near-future applications for lunar science.

