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High-Rate Dust Measurements with the Cosmic-Dust-Analyser

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The dust detector CDA onboard Cassini determines the properties of interplanetary and planetary dust grains. The instrument characterises
the speed, mass, electric charge and composition of micron sized dust
grains. Since its orbit insertion of Cassini in August 2004, the detector measured the dust densities and dust properties in the dense E-ring of Saturn during ring plane crossings at various distances. The instrument properties constrain the measurement of dust grains in dense dust environments.
The environmental conditions during the flybys of Cassini through the dust and gas plumes above the surface of the moon Enceladus in the year 2008 required
special operational preparations and instrument settings in order to achieve
unique results. This paper describes some results achieved in dense dust environments as the inner E-ring or the Enceladus plume and emphasizes instrumental limits.