



Dust impact charge generation measured by Cassini's Dust Instrument, CDA.

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The Cosmic Dust Analyzer, CDA, onboard the Cassini spacecraft has recorded many ten thousand dust impacts during its tour through the Saturnian system including its E-ring. CDA is an impact ionization detector that measures the charge released from a hypervelocity impact of typically micron sized dust particles. The instrument has an impact target of 0.1 m² sensitive area and a wide field-of-view. Dust impact charges released range from 10⁻¹⁵ to 10⁻¹¹ C. The impact rates range from 10⁻³ to $\gg 1$ impacts per second during E-ring crossings at distances between 3 and 19 R_S (R_S Saturnian radius). Because of the roll of the spacecraft CDA scans a wide range of impact directions. Due to the high inclination of the Cassini's orbit particles far outside the equatorial plane of the Saturnian system have been recorded. The overall region in which dust particles have been detected lies between 3 R_S and 40 R_S radial distance and at least at latitudes between -34 and +31 degrees. Both the charge amplitude distribution and the impact rate at various positions and at different pointing directions will be presented.