

Saturn's ring rain and Enceladus' subsurface ocean as seen by the Cassini Cosmic Dust Analyser

*Sean Hsu¹, Sascha Kempf¹, Mihaly Horanyi¹, Ralf Srama², James O'Donoghue³

1. LASP, University of Colorado, Boulder, CO, USA, 2. IRS, University of Stuttgart, Stuttgart, Germany, 3. NASA Goddard Space Flight Center, Greenbelt, Maryland, USA

Dust particles serve as microscopic messengers carrying information from sources inaccessible by space probes. The compositional and dynamical information of various dust populations provided by the Cosmic Dust Analyser offer a unique perspective to examine the rings, moons, and their interactions in the Saturnian system. In this talk I will focus on the latest results from the Cassini Grand Finale mission about Saturn's ring rain, i.e., the ring-planet interactions driven by the infall of ring material to Saturn's atmosphere, and its implications about Saturn and its magnificent ring system. I will also provide a brief summary of other major findings by the Cassini Cosmic Dust Analyser, including the discovery of the subsurface ocean and hydrothermal activities within the geologically active moon Enceladus, the composition of interstellar grains, Saturn's diffuse rings, and the electromagnetic interactions of charged nanodust particles with the magnetosphere and the solar wind.

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