



## **Chemical signatures of Enceladus in the composition of E-ring particles**

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The population of Saturn's outermost tenuous E-ring, is known to be dominated by tiny water ice particles. Active volcanism on the moon Enceladus, embedded in the E-ring, has been known since late 2005 to be a major source of particles replenishing the ring. Therefore particles in the vicinity of Enceladus may provide crucial information about dynamical and chemical processes occurring below its icy surface.

We present a statistical evaluation of thousands of impact ionisation mass spectra of Saturn's E-ring particles, with sizes predominantly below  $1 \mu\text{m}$ , detected by the Cosmic Dust Analyser onboard the Cassini spacecraft. We focus on the identification of non-water features in spectra. We specify the categorisation of two different spectrum types, which probably represent two particle populations. Both types can be found in abundance everywhere in the E-Ring, which indicates a rapid dispersal of Enceladus' plume particles within the entire ring. In one of the types silicate minerals and/or organic compounds are identified as the most abundant impurities within the icy particles. This finding hints at dynamic interaction of Enceladus' rocky core with liquid water.