

Ice volcanism on Enceladus: From simulations to observations

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Abstract

Cassini observations of Saturn's diffuse E-ring and the moons embedded in it have revealed a complex ice volcanism near Enceladus' south pole. It turned out to be an important source of particles feeding the E-Ring. In order to understand the complex interplay between the plumes and the E-ring structure, we have simulated the lifecycle of particles injected by the ice volcanoes on Enceladus and their propagation in the Saturnian system. Here we present simulated optical/infrared images and spectra derived from the simulations using a Mie scattering model. Comparison with spectral data allows us to constrain the size distribution of the particles, which is a crucial constraint to the process of particle formation.

References

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