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Composition mapping of Saturn's main rings during the Proximal orbits

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Due to its large surface-to-mass ratio, impactor-ejecta processes associated with exogenous (micro)meteorite influx plays an important role in the compositional as well as the structural evolution of Saturn's main ring system. Ring impurities escaped as ejecta are lofted by electromagnetic forces and could be detected during the Proximal orbits, the final orbits of the Cassini mission. Measurements of these ejecta particles will provide the first in situ composition analysis of the ring material. Understanding the electrodynamics of submicron-sized impact ejecta from Saturn's main rings will further allow us to achieve the ring composition mapping. We will discuss the dynamical evolution of the ring impact ejecta, their sinks, and the envisioned in situ dust measurements during Cassini's final orbits.