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The Cassini Enceladus encounters in the view of energetic particle measurements

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During the time period 2005-2009 the Cassini spacecraft flew by the moon Enceladus nine times. This moon embedded in the radiation belts of Saturn plays a very important role for the magnetosphere as it is the primary plasma source of the system. Energetic particle measurements performed during those flybys showed the influence of the Enceladus plume on the properties of the magnetosphere. Features in the data indicated that the spacecraft was connected to the plume material along field lines long before the entrance into the high density region. Absorption signatures in the loss of energetic electrons bouncing along those field lines clearly show an energy dependence from which density calculations might be possible. During one of the flybys the presence of dust in the energetic particle data offers the opportunity to nicely correlate those results with onboard dust measurements of the CDA instrument.
In this paper we give an overview of the energetic particle response in the vicinity of the moon and during the closest approach to the moon Enceladus.