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Charged particles in the Earth's magnetosphere: Recent results from the ECT instrument suite onboard the Van Allen Probes mission

Kanekal, S.G.⁰, Baker, D.N.¹, Blake, J.B.², Fennell, J.F.², Reeves, G.D.³ and Spence, H.E.⁴

⁰NASA Goddard Space Flight Center

¹LASP, University of Colorado

²The Aerospace Corporation

³Los Alamos National Laboratory

⁴Univeristy of New Hampshire

The Van Allen Probes mission comprises of two identically instrumented spacecraft, are probing the Earth' inner magnetosphere with unprecedented detail. The two spacecraft were launched late August 2012 and carry a comprehensive suite of instruments that characterize electric and magnetic fields, plasma waves and charged particles in the Van Allen belts. In particular the ECT suite of instruments comprising of HOPE, MagEIS and REPT instruments measure electrons, protons and ions and their angular distributions over energies ranging from a few eV to several tens of MeV. The ECT measurements have already made significant and paradigm shifting contributions towards the understanding of the physics of charged particles in the Earth's radiation belts. We present here a review of the science results, describe the ECT instrument suite and the details of data access to the science community at large.