



Millisecond resolution electron fluxes from the Cluster satellites: Calibrated EDI ambient electron data

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The Electron Drift Instrument (EDI) onboard Cluster can measure 500 eV and 1 keV electron fluxes with high time resolution during passive operation phases in its Ambient Electron (AE) mode. Data from this mode is available in the Cluster Science Archive since October 2004 with a cadence of 16 Hz in the normal mode or 128 Hz for burst mode telemetry intervals. The fluxes are recorded at pitch angles of 0, 90, and 180 degrees. This paper describes the calibration and validation of these measurements. The high resolution AE data allow precise temporal and spatial diagnostics of magnetospheric boundaries and will be used for case studies and statistical studies of low energy electron fluxes in the near-Earth space. We show examples of applications.