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# Radial Diffusion with Data Derived Lifetimes using Various Field Models.

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We attempted to quantify the competing effects of inward radial diffusion and losses inside and outside plasmasphere on the distribution of the outer zone electrons with a time dependent radial diffusion model. We present a detailed analysis of individual storms as well as comparison of data and model for 500 CRRES orbits with fluxes derived in terms of Roederer L* using static and dynamic field models . . The rate of radial diffusion has been parameterized by the Kp with the loss time as an adjustable parameter. We find that plasmapause is a boundary between rapid and moderate losses. 1.0 MeV electron lifetimes are less then 1/2 day during the storm main phase and 3 days under quiet conditions, consistent with current estimates of the storm time loss rate and also provide an acceptable representation of electron decay rates following the storm time injection. We find that a radial diffusion source alone with data derived effective lifetimes approximately reproduces the amplitude and spatial distribution of outer zone fluxes, but fails to reproduce the gradual build up of fluxes observed for many storms as well as depletions of the radiation belts during the main phase of the storm.