

# Space Physics Seminar

## Thursday, October 12, 2017

Robyn Millan  
Dartmouth

### *Dynamics of Radiation Belt Electrons and the BARREL Experiment*



The intensity of relativistic electrons in Earth's radiation belts is known to be highly variable, but the processes responsible for this variability are still not well understood. Observed rapid depletions and subsequent rebuilding of the particle population trapped by Earth's magnetic field imply an efficient energization process, in some cases accelerating electrons to multiple MeV energies on a timescale as short as minutes. This talk will provide a review of radiation belt physics and discuss some outstanding science questions. BARREL (Balloon Array for Radiation belt Relativistic Electron Loss) is a multiple-balloon experiment that works in tandem with NASA's twin Van Allen Probes to study atmospheric loss of radiation belt electrons. A total of 55 balloons were launched from Antarctica in 2013 and 2014 and Sweden in 2015 and 2016. A summary of science highlights from these campaigns will be presented.

4:00pm in CAS 502. Refreshments served at 3:45pm in CAS 500.

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Next Week  
Scott Palo  
UC Boulder