Abstract Submitted
for the 4CF15 Meeting of
The American Physical Society

**Falcon Solid-State Energetic Electron Detector (FalconSEED)** ROBERT OLESEN, RYAN CRESS, GEOFF MCHARG, United States Air Force Academy — Energetic charged particles create a hazardous environment surrounding satellites in orbit. Shielding methods must be implemented to protect electronics in order to prevent satellite anomalies caused by spacecraft charging. A proper understanding of the space environment is required to forecast these events and improve simulation. Using the computer software MCNP, we have developed a preliminary model of an electron detector called the Falcon Solid-State Energetic Electron Detector (FalconSEED). The detector is sensitive to electrons from 10-100 keV, which complements sensors already being considered for implementation on Air Force satellites. FalconSEED utilizes a solid-state detector and implements a geometry of tungsten baffles to reduce the uncertainty in angular distribution of the measurements and prevent backscattering. Initial simulations of the detector are being used to provide assurance of the design specifications for a future prototype of the detector.

Brian Patterson
United States Air Force Academy

Date submitted: 11 Sep 2015 Electronic form version 1.4