Geophysical Research Abstracts
Vol. 16, EGU2014-4517, 2014
EGU General Assembly 2014

Van Allen Probes Observations of Possible Direct Wave Particle Interactions

Joseph Fennell (1), Seth Claudepierre (1), William Kurth (2), Michael Henderson (3), Brian Larsen (3), George Hospodarsky (2), Jbernard Blake (1), James Roeder (1), James Clemmons (1), Harlan Spence (4), Herb Funsten (3), Geoff Reeves (3), Craig Kletzing (2), and John Wygant (5)

(1) The Aerospace Corp., Space Science Applications Lab.: M2-260, Los Angeles, CA, United States (joseph.fennell@aero.org, +1 310 563 3156), (2) Department of Physics and Astronomy, University of Iowa, Iowa City, IA, USA, (3) Space and Atmospheric Sciences Group, Los Alamos National Laboratory, Los Alamos, New Mexico, USA, (4) Institute for the Study of Earth, Oceans, and Space, University of New Hampshire, Durham, New Hampshire, USA, (5) School of Physics and Astronomy, University of Minnesota, Minneapolis, MN, USA

We present observations of wave-particle interactions observed on the Van Allen Probes during intervals of sporadic increases or bursts of 10's of keV electron fluxes observed in conjunction with bursts of chorus activity in January and February 2013. The electron flux and chorus bursts occurred together on a nearly one for one basis. The electron angular distributions change during the burst events such that flux increases evolved from normal distributions peaked at 90° to form maxima in the electron angular distributions at 75-80° local pitch angle with the fluxes at 90° and <60° remaining essentially the same as in the pre and post burst distributions. These events occurred well outside the plasmasphere following plasma injections. They were observed by both Van Allen Probe A and B spacecraft. The plasma density, electron gyro-frequency and pitch angle of peak flux in a burst was used to estimate the resonant electron energy for the January event. The result of ∼25 keV for the upper band chorus observed is consistent with the energies of the electrons showing the flux enhancements observed by the ECT/MagEIS and ECT/HOPE spectrometers. These results will be described in detail and questions concerning the source of such events will be discussed.