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We present observations from the closest conjunction ever published of chorus and relativistic electron microbursts. During a 11 MLT pass, a low earth orbiting cubesat - Focused Investigations of Relativistic Electron Bursts: Intensity, Range and Dynamics (FIREBIRD) II observed energetic microbursts throughout its entire energy detection range of 250-850 keV. Magnetically conjugate to this in the outer radiation belt was Van Allen Probe A which observed rising-tone, lower band chorus waves with similar durations and cadences. No other waves were observed. These observations definitively establish that chorus directly causes relativistic electron microbursts.

FIREBIRD observations indicate that no measurable energy dispersion from 250-850 keV is observed, implying that the chorus waves strongly (nonlinearly) scatter the electrons into the bounce loss cone in a single interaction. In addition, since microbursts have been previously established to be extremely small in physical cross-field scale, interaction regions are limited to those in which 250-850 keV e- can be scattered on the same magnetic field line. Ray-tracing simulations suggest that the loss cone scattering likely occurs at 20-30 deg latitude, rather than at the magnetic equator.

Finally, comparison of observed time-averaged microburst flux and estimated total electron drift shell content at L=5.6 indicate that microbursts may represent a significant source of energetic electron loss in the outer radiation belt.