A Global View of Broadband Plasma Waves Observed in the High Latitude Boundary Layer: Polar

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From recent Polar plasma wave observat ions, wc find strong broadband plasma waves to be always present on field lines that map into the dayside boundary layer and most of the times for field lines that map into the nightside sector. The waves arc located just inside the polar cap region. They are spiky wideband signals from -10 to -104 Hz). For this talk, wc will concentrate only on the dayside waves. The fine structure and intensity of the waves are approximate] y similar to that fount] in the ISEE- 1, -2 study of Anderson et al. [1982] for the dayside low latitude boundary regions. The waves have both electric and magnetic field components. Wc will further identify wave mode(s) by using high resolution data, examining the wave spectrum in both B' and E', and perform a statistical study to find the. dependences on solar wind activity using WINI) data. The wave spectra and amplitudes will be compared with those of previous ISEE-1and -2 studies to identify the source region. These ncw observations place further constraints on the generation mechanism of the waves. Details will be discussed.

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