

## THE AUTOMATIC WHISTLER DETECTOR: PRELIMINARY RESULTS FROM ROTHERA (ANTARCTICA)

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Whistlers have been regarded as cheap and effective tools for plasmasphere diagnostic since the early years of whistler research. Single-hop lightning-generated whistlers are observed by ground-based VLF detectors after the electromagnetic energy has propagated through the source ionosphere, inside a field-aligned whistler duct in the plasmasphere, and finally through the ionosphere in the conjugate region. Whistlers can be used to determine plasmaspheric properties, including the plasmaspheric electron density and the L-shell of the whistler duct. The Eötvös University Automatic Whistler Detector (AWD, Lichtenberger et al. 2008) system has been operating in the British Antarctic station, Rothera (L=2.71) since the beginning of 2008. Here we present statistical results for the first year of operation. We have recorded and detected both multiple flash and multiple group whistlers, with high occurrence rate for all the year and particularly high activity during the July-September period, when the activity reached ~1 whistler/second. This high activity cannot be explained by the lightning activity at the magnetic conjugate area, which is ~2-4flash/km<sup>2</sup>/year and is located at 200km North-East from Boston over the Atlantic ocean. The most likely lightning source region is the near-conjugate Florida-Caribbean region.

References: Lichtenberger J., Cs. Ferencz, Bodnár L., Hamar D., Steinbach P.(2008): Automatic Whistler Detector and Analyzer system: Automatic Whistler Detector. J. Geophys. Res., 113, A12201, doi:10.1029/2008JA013467

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