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Correlating magnetic field variations and ULF data

E.D. Schmitter

University of Applied Sciences Osnabrueck, Osnabrück, Germany

The aim of the ongoing investigation is monitoring and characterizing geomagnetic activity by correlation of fluxgate magnetometer readings and induction coil ULF data recorded at the same site at medium geomagnetic latitude. Diurnal ULF intensity variations correlating with magnetic field Sq variations are explored as well as Pc1,2,3 pulsation activity and possibly lightning triggered transients. A new method is proposed to get significant ULF data down to the sub Hz domain using a small and portable search coil resonated at 8 Hz and the signal then being demodulated. The system is newly designed to allow for continuous operation within the upcoming next solar cycle in a noisy environment.