



Study of latitudinal effects on VLF transmitter signals recorded by DEMETER/ICE experiment

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We report on VLF transmitter signals observed by the 'Instrument Capteur Electrique' (ICE) experiment onboard the DEMETER micro-satellite. The DEMETER polar and circular sun-synchronous orbits lead to cover an invariant latitude range between -65° and $+65^\circ$ where up- and down-going half-orbits correspond to night-time (22:00 LT) and day-time (10:00 LT), respectively. The DEMETER orbit features permit to record signals emitted by some VLF ground-stations and detected by ICE experiment. We consider three transmitter signals emitted by stations in Europe (Germany, DFY, 16.58 kHz), in Asia (Japan, JP, 17.8 kHz) and in Australia (Australia, NWC, 19.8 kHz). We study the variation of these VLF signals taking into consideration the DEMETER satellite latitudes. We emphasize on latitudes where the satellite is close to the Earth's sub-auroral regions. We discuss particularly the presence, or not, of auroral magnetic activity effect on the VLF transmitter signals.