



Propagation of low frequency radiowaves from the ground to the lower magnetosphere

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The dependence of low frequency radiowaves emitted by powerful ground-based transmitters on ionospheric plasma parameters is studied with measurements onboard the DEMETER spacecraft. Daily and seasonal variations of radiowave amplitudes, the amplitude dependence on geomagnetic activity are statistically studied with the data mining system of heterogeneous data developed for the DEMETER mission. It is found that spatial variation of wave amplitudes are observed sometimes above transmitters, the scalelengths are typically of few hundreds kilometers. A physical mechanism of these phenomena is presented and discussed.