



Plasma waves in the Hermean magnetosphere

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The Hermean magnetosphere is likely to contain a number of wave phenomena. We briefly review what little is known so far about fields and waves around Mercury. ULF waves are known to exist. We discuss how their frequency may provide information on the plasma composition while the phase difference between the electric and magnetic fields provides an estimate of the reflection coefficient at low altitude. We further discuss under what circumstances “auroral” radiation similar to terrestrial AKR could exist at Mercury, and the likelihood for such circumstances to occur. The possible detection of such radiation would have far-reaching consequences. In particular, it would suggest the existence of parallel potential drops and the occurrence of substorm-like processes. We also discuss bow shock waves, bremsstrahlung, and synchrotron radiation, in terms of both expected characteristics and probability of occurrence.