Global Monitoring of Magnetosphere dynamics mapping of PC1 regions

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Pc 1 ULF waves are enhanced in intensity and in extent of distribution during major magnetic storms. This fact, however, remains integrated in our mind based on statistics or on accumulation of impressive events. These after light shows of magnetic storm named PC1 storm are interesting to study: how storm time plasma in the outer-inner magnetosphere is accommodated producing free energy of the electromagnetic waves. In this paper results on spatial and temporal characteristics PC1 regions associated with magnetic storms are reported based on comprehensive analyses of data obtained by the semi-global network operated during the STEP period with induction magnetometers. Also we propose that it be worth while making efforts to achieve a global networkfor detecting PC1 waves.

Pc 1 ULF waves are known to be typically enhanced in intensity and in extentof source distribution in the course of major magnetic storms, specifically in the recovery phase. This well known fact, however, is a kind of those integrated in mind of researchers based on past statistics or on accumulation of impressive events. These after light shows of magnetic storm being appropriate to be named as PC1 storm are interesting to study how storm time plasma in the outer-inner magnetosphere is accommodated with producing free energy of the electromagnetic waves. In this paper results on spatial and temporal characteristics PC1 regions associated with magnetic storms are reported based on comprehensive analyses of data obtained by the semi-global network operated during the STEP period with induction magnetometers. Also we propose that it is worth to devote much more effort to achieve a global network of an extended scale for detecting PC1 waves especially in the plasmapuase latitudes by linking established observation sites on Internet and by adding new sites in blank areas. Methods for determining an apparent center position of PC1 region are compared and are applied to produce daily source distribution from data a few or more sites.