



Investigation of ionosphere inhomogeneties during the complex heating campaign in March 2004

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In the frame of INTAS project (grant #01-0614) a complex geophysical experiment was carried out around EISCAT heating facility in Tromso in March 2004. Experiment aimed to prove and systematize previously obtained results on effects in ionosphere-magnetosphere coupling during the HF heating. The following standard observation was used for analysis: IMAGE magnetometers network, IRIS imaging riometer in Kilpiisjarvi, portable TV all-sky camera mounted in Kilpiisjarvi and a new type of magnetic observation - gradient measurements of ULF electromagnetic disturbances in a frequency band ($0 < f < 10$ Hz). This set of observation was completed with electric and magnetic field data from CLUSTER's satellites that were in good conjugation with heating facility on March 17. The influence of the HF radiation on ionospheric currents and variation the riometer's absorption was confirmed. The gradients of the ULF magnetic fields and azimuth angles to the source of magnetic disturbance in ionosphere were calculated. The possibility to locate and monitor the ionospheric inhomogeneity with ground based set of instruments was pointed out. The disturbed tube from Tromso transmitter was estimated at the height of satellites transverse section. Only two out of four CLUSTER's satellites have detected the wave form signals in magnetic and electric fields which are in correlation with Scandinavian transmitter schedule.