High- and mid-latitude Pc1,2 waves modulated by the magnetospheric compressions during the recovery phase of magnetic storms

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We present the results of the study of the geomagnetic field and space plasma disturbances developing simultaneously in the solar wind, in the inner and outer magnetosphere, and on the ground. The disturbances were observed on April 11, 1997 and on April 7, 2000 during the recovery phase of the moderate and the great magnetic storms. The fluctuations of the solar wind density, the H-component of geomagnetic field, the power of Pc1-2 (0.1 – 1 Hz) waves in the middle latitudes, the density and flux of the magnetospheric plasma at the geosynchronous orbit, as well as the fluctuations of the geomagnetic field at geosynchronous orbit and in the northern polar cap, were similar and developed nearly simultaneously. Time delay between the disturbances occurrence in different magnetospheric regions was comparable with a time of the fast mode propagation. These disturbances were accompanied by the generation of the high latitudes Pc 1-2 in nearly the same frequency range as at mid-latitude observatories. The peculiarities of the wave phenomena observed in different magnetospheric domains are discussed. This study is supported by the INTAS grant 03-51-5359 and RAS program 30.