



Siberian input into understanding of the Pc1 phenomenon

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The report is devoted to history of Pc1 studies in Irkutsk and Yakutsk. First observations of Pc1 geomagnetic pulsations in Siberia were made by Peter A. Vinogradov during the International Geophysical Year 1957–1958 near Irkutsk. Terrestrial current measurements have been used for that purpose. A lot of morphological characteristics of Pc1 and relations of this pulsation type with other geophysical phenomena have been revealed. Data collected were used to compile the first catalogues of Pc1 and IPDP activity. They are in use for various studies until now. First comparisons of Pc1 characteristics with the interplanetary medium parameters were made by Irkutsk and Yakutsk investigators in 1960s. In 70s a number of Arctic field campaigns were conducted. Meridional and latitudinal chains of search coil magnetometers were deployed to study temporal and spatial distribution of Pc1 and other type pulsations. Some interesting new results have been obtained including the conclusion about attachment of Pc1 at polar stations to the projection of the detached plasma regions in the dayside magnetosphere. In 80s and 90s theoretical works interpreting various particularities of Pc1 observations were published. With the transfer to digital recording of geomagnetic pulsations more sophisticated analysis of Pc1 has become possible. A method of goniometry has been employed to analyse simultaneous Pc1 data from several remote observatories. The conclusions were compared with GPS sounding of the ionosphere. This report contains many illustrations of the results obtained. The work was supported by RFBR grant 03-05-64361.