

Fast solar wind monitoring instruments for plasma turbulence studies in Strannik and THOR missions

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Fast Solar Wind Monitor BMSW – an instrument flown as a part of the PLASMA-F complex onboard the Russian Spektr-R radioastronomical spacecraft – celebrated four successful years in operation this summer. With a set of 6 Faraday's cups, the instrument provides high-time resolution data of the ion flux, velocity, density, and temperature suitable for an analysis of fluctuations up to 16 Hz. As such, it is very suitable for studies of the plasma turbulence properties at a transition from MHD to kinetic scales. Advanced versions of this instrument have been included in the scientific payload of the Russian Strannik spacecraft (BMSW-S, implementation phase C) and ESA THOR spacecraft (FAR, phase A).

The measurement technique, its implementation, ground data processing and improvements of the new instrument design are presented in the contribution.