



Longtime analysis of floating potential and electron temperature by TPMU - PROBA II microsatellite instrument

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This study is a next step of our previous conference paper. We use methods of multivariate time-series analysis to study seasonal and geographical variations of the floating potential and the electron temperature measured by TPMU - PROBA II microsatellite instrument. The device is working with limitations of scientific measurements caused by installed onboard software. This brings lower data volume as it was planned. Thus affected are ion measurement and partially also electron temperature measurement. This limited function of the instrument is stable and lasts since the beginning of the mission. The data from the period 2010-2014 are joined with orbital parameters. The analysis is then performed separately for Equatorial region, and North and South hemispheres. We implement the time-series decomposition to recognize seasonal and non-periodic components. The annual seasonal changes in the floating potential and electron temperature are observed in this analysis. Changes of the floating potential in the beginning, the end and duration of seasons over a period of years also reflect changes of Kp and Dst indices.