



## Multi-instrumental studies on the Topside Ionosphere

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For nearly 6 years, French satellite DEMETER, has gathered rich set of data, crucial for studies of the topside ionosphere. Multi-instrumental measurements has been obtained during periods of both high Sun activity, as well as, calm conditions, what implies significant material for comparison and case-study analysis. Analysed data were obtained with IAP -thermal plasma instrument and Langmuir probe - ISL, ICE - electric field instrument. We provide global characteristics of topside ionosphere for major plasma parameters, but also results of ionospheric sounding in the VLF range.

Goal of current studies is twofold:

- better understanding of ionosphere dynamics focused on investigation of ion drifts, variations of electron and ion temperature and densities;
- detailed analysis of seasonal effects and variations in the upper atmosphere, but also possible impact of man-made activity on the topside ionosphere environment.

Even though the main target is aimed at global characteristics, precise inquiry of high latitude regions can not be neglected. For this reason, set of measurements when DEMETER was switch into operational mode in the auroral regions is examined. In order to gain better insight into analysed process, comparison with COSMIC occultation data has been examined.