



Plasma bubble detection in the DEMETER micro-satellite data

T. Onishi, C.-T. Nguyen, and J.-J. Berthelier

LATMOS/IPSL, St-Maur-des-Fosses, France (tatsuo.onishi@latmos.ipsl.fr)

The occurrence of plasma bubbles is the most important phenomenon that affects the night time equatorial ionosphere resulting in strong and localized drops of the plasma density with often very sharp boundaries. Besides its own interest for ionospheric physics this phenomenon is also of significant practical importance since it disrupts HF communication and GPS signal reception. In the frame of a French ANR funded project to model the rise and development of plasma bubbles we have searched for specific disturbances of the low latitude ionosphere that might be considered as “precursors” of plasma bubbles, possibly leading, under favourable conditions, to an unstable ionosphere. To this aim, we have manually selected and classified typical events observed on data from two instruments on board the DEMETER satellite, IAP (Plasma analyzer) and ISL (Langmuir probe experiment). We present in this poster the various types of events and show that one of them appears to be associated with the later occurrence of plasma bubbles. From the first list of events recorded during an ~ 18 month period we will discuss in detail the plasma disturbances and present initial results of a statistical study.