



Ionospheric modelling using multi-satellite data: Present state and future possibilities

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Data-based ionospheric modelling has traditionally been based on ground-based data and/or data of single satellites located in or above the ionosphere. Consequently, the related ionospheric modelling techniques have been developed such that they adjust to these available input data sources. A first progress towards multi-satellite ionospheric modelling is offered by the Cluster mission that provides four nearby virtual data points in the ionosphere by mapping parameters from the magnetosphere. However, the mapping procedure may be difficult, and not all ionospheric parameters can be determined in this way. The SWARM mission provides for the first time up to three nearby, simultaneous and real data points in the ionosphere. In this presentation, some present techniques of satellite-based ionospheric modelling will be reviewed, which also offer the possibility to include ground-based data, where available. Possible extensions of these techniques for use with the SWARM mission will be discussed.