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Ionospheric specification and forecasting based on observations from European ionosondes participating in DIAS project

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The main objective of DIAS (European Digital Upper Atmosphere Server) project is to develop a pan-European digital data collection on the state of ionospheric part of the upper atmosphere, based on real-time information and historical data collections provided by most operating ionospheric stations in Europe (Athens, Rome, Ebre, Juliusruh, Chilton, Pruhonice, Lycksele and Warsaw). Based on the raw data collection, DIAS system develops and distributes several products required by various groups of users for nowcasting and forecasting purposes. The DIAS server (http://www.iono.noa.gr/DIAS) operates since May 2005 and the basic products that are delivered are real-time and historical ionograms from all DIAS ionospheric stations, frequency plots and maps of the ionosphere over Europe based on the foF2, M(3000)F2, MUF and electron density parameters, as well as long term and short term forecasting up to 24 hour ahead. The paper reports on the utilization of ionospheric measurements in modelling techniques applied by DIAS for the specification and forecasting of the ionosphere over the European region, giving details on the final products available to DIAS users.