



Ionospheric studies and SWWT

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Critical to the ionospheric studies whether they are related to the theoretical investigations, the space weather prediction systems or the planning and operation of radio systems are (i) a modern network of ground-based synoptic instruments making regular 24/7 measurements; (ii) the physical understanding and recent advances that can lead to positive predictions of the expected effects of ionospheric activity on the near Earth space environment and on technological systems which operate within this environment; and (iii) current activities within different European cooperative projects involving Space Weather Working Team (SWWT) from ESA. A review of these activities currently available in Europe is followed by brief survey of the associated particular problems. Specific examples during recent intense solar events show how ionospheric monitoring techniques that have contributed immense data sets and related empirical and theoretical formulations have been incorporated in different ionospheric specification and prediction models for real-time operational applications required in space weather applications related to the Earth's ionosphere.