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New oblique-incidence ionospheric sounding campaign over Europe and its data application

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Oblique-incidence ionospheric soundings provide a means of determining in real time the prevailing propagation modes and are useful for examining ionospheric conditions in retrospect. They are extremely important for the testing of propagation predictions for HF radio communications, ionospheric radar localization and surveillance and for validating ionospheric models in different regions. This paper describes the basic principles behind the oblique-incidence ionospheric sounding technique in the campaign starting in November 2003 over radio link Inskip, UK (53.50˚N; 2.5˚W) and Rome, Italy (41.8˚N; 12.5˚E) as an example for any modern oblique sounding network. However, the main objective of the paper is to present a summary of the results obtained during different seasons and time intervals, illustrating the potential of these oblique incidence sounding measurements over Central Europe in routine monitoring of the ionosphere and its application in testing different long-term ionospheric prediction, nowcasting and forecasting techniques influencing radio systems. A short description of a new oblique-incidence ionospheric sounding campaign and a preliminary analysis of the measurements over the radio link Inskip, UK (53.50˚N; 2.5˚W) and Chania, Crete, Greece (35,7^0 N, 24.0^0 E) active since April 2005, are also given.