

MONITORING OF IONOSPHERIC WEATHER OVER CYPRUS AND EGYPT: FIRST RESULTS

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This paper presents first results from a scientific initiative to establish an ionospheric monitoring network over Cyprus and Egypt by linking the corresponding instruments in operation in the two countries: a group of three Coherent Ionospheric Doppler Receiver (CIDR) systems being deployed in a roughly north-south chain in Egypt and a modern digital DPS-4D digisonde in Cyprus. All the instruments considered in this paper have been recently installed in an effort to initiate ionospheric research in the two countries. The cooperation between the two countries is considered very beneficial especially taking into account the fact that both countries lack important infrastructure and a tradition of ionospheric observations. The CIDR systems provide TEC (Total electron content) measurements by tracking LEO beacons at 150 and 400 MHz at higher data rate than GPS signals allowing measurements of rapid ionospheric variations. The DPS-4D is the latest digital ionosonde by the University of Massachusetts Lowell's Center for Atmospheric Research (UMLCAR) capable of performing fast ionograms and improved layer height variation measurements by taking advantage of the Precision Group Height Measurement technique. The observations presented demonstrate the morphology of electron density enhancements at particular time intervals over a significant latitudinal extent in an attempt to enhance the knowledge on the coupling mechanisms between mid-latitude and low-latitude ionosphere over the Eastern Mediterranean region.

Low-latitude medium latitude coupling, TEC

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