



Case study of wind analysis at two coastal site using remote sensing sensors and ground based stations

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In order to investigate how the variation of wind regimes influences meteorological parameter on coastal site, a parallel study, between wind profiles until 300 m measured in experimental sites at Tyrrhenian Sea and at Black Sea was realized. The availability of Leosphere Wind Cube profiles until 250 m at Lamezia Terme (Italian coast) and SCINTEC MFAS Sodar data until 720 m (Bulgarian coast) made possible a key study of the influence of different wind regimes in the two sites. In particular it was possible to select three days with different wind regime: one with well-developed breeze regime, one with synoptic regime and the last one with uncompleted sea breeze. The stability classification in the three days was studied using two sonic anemometer at frequency of 10 Hz placed at 10 m and in operation simultaneously in both coastal sites. Finally this last data were compared with SAR(Synthetic Aperture Radar) wind obtaining a good correlation and proving that it is possible use the satellite data for wind estimation.

Keywords: Wind lidar profile, Sodar, SAR, breeze circulation, Remote sensing data, Mediterranean sea, Black Sea, Coastal zones, sonic anemometer