



## **Wind profile in closed breeze circulation cells at a Black Sea coastal site**

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A wind profile climatological study is presented based on SCINTEC sodar data from a Black Sea coastal site. The site is characterised by clear 4 seasons – hot summer with more than 70 % breeze days (in June, July, August), warm days with shallow breeze cells in spring and autumn, and windy mild winters. The measurements cover 4 years period (June 2008 – June 2012).

Emphasis is made on the wind profile in closed breeze cells. During such conditions, a zone of calm winds forms between the marine flow below and the reverse flow above. Firstly, an estimate is made on the number of days with closed breeze circulation, as the measurements show directly only those falling within the range of the sodar, namely 400 – 600 m. Secondly, average profiles are composed for days with similar day duration. It is found that during spring and autumn, the calm zone falls between 150 and 300 m, thus within the height range of large wind turbines. Thirdly, the mean and turbulence characteristics of the flow near the ground are analysed together with synoptic situations to reveal the input of local scale and large scale forcing.