



Mapping the wind energy potential in the Carpathian Basin

B. Varga (1) – T. Szentimrey (1) – Z. Bihari (1) – G. Szépszó (1) – I. Dobi. W. (1)
Hungarian Meteorological Service , (varga.b@met.hu)

Utilization of renewable energy - beside fossil fuels - gets even greater role in our developing society. In Hungary the using of one of the cleanest renewable energy resource - the wind energy is entering a new age in the last few years. We look for the optimal height and locations having the greatest energy density and have to analyze the characteristics of the wind flow and also map the whole country. Many measuring sites are needed all over the examined regions not only on the surface layer but - primarily in case of the wind flow - in higher altitudes with high temporal and vertical resolution. During our work with the contribution of a new instrument - SODAR - we can easily reach our aims by detecting the vertical wind profile above given sites and measure the wind climate at turbine height.

Another important result of the wind climate investigations in Hungary are the wind atlases and maps. To find the promising places for the great investors on wind farms we used a high resolution orography database and an estimated roughness on different parts of the country. Maps of the average wind speed fields at 6 different levels up to 150 meters are made first from long term data analysis using a statistical interpolation method and also a state of the art procedure by running numerical models on the ERA-40 reanalysis fields.