A CFD-BASED PROCEDURE FOR SIMULATION OF WIND FLOWS IN COMPLEX REGIONS

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ABSTRACT

A method for simulation of wind flows, which is based on computational fluid dynamics (CFD) approach, is tested in a region with complex terrain. For the region adopted, limited measurements of wind velocity and direction exist, and are used as the input data for specification of boundary conditions. The resulting flow field quantities (wind power density and turbulent kinetic energy) are shown, indicating the parts of the region which are suitable or unsuitable for wind turbine positioning. The method employed offers a number of benefits for efficient and reliable estimation of wind resources.