Wind Potential determination in a known area

O. Capatina¹, T. Grosan², R. Trimbitas²

¹I.P.A. Cluj, o.capa@astral.ro,
²Universitatea Babes-Bolyai Cluj, tgrosan@math.ubbcluj.ro, tradu@math.ubbcluj.ro

Abstract - The economic operation of wind turbines is completely dependent upon the local wind conditions. Statistically determined wind velocity distribution is decisive for the expected energy yield. Before the pillars of wind turbines are erected, the expected energy potential should be predicted as precisely as possible to reduce the investments risk. Energy predictions based on local wind conditions measured at the hub height of a planned turbine give the most exactly predictions. However, this involves an expansive and time (years) consuming process. Our issue for fine wind emplacement is based on a Patent Application that claims that the wind potential in any other point of a known area can be inferred provided that we know the wind potential in one point of the area. Our aim is 1) to avoid the obsolete, expansive and inaccurate method to build wind map, and 2) to offer a final simply to be used tool. To solve that problem we must enter in the field of high mathematics of fluid dynamics.

I. INTRODUCTION ...

II. PROBLEM FEATURES ...
III. MATHEMATICAL METHOD ...
IV. CONCLUSION ...

REFERENCES


(See IEEE - integral publication)