Validation of Tip Corrections for Wind Turbine computations

Validation of Tip Corrections for Wind Turbine computations
Tip loss effect of rotors plays an important role in predictions of wind turbine performance. Classical tip corrections, based on the Prandtl tip reduction function, including Glauert’, Wilson & Lissaman’s and De Vries’ corrections are considered in the paper. In the proximity of the tip, these classical models fail to predict the physical behaviour. A new tip correction model is proposed. Comparisons between numerical and experimental data for flows past the NREL combined experiment rotor and the Swedish WG 500 rotor show that only the new model can predict correctly the force in the tip region.

General information
State: Published
Organisations: Fluid Mechanics, Department of Mechanical Engineering
Contributors: Shen, W. Z., Mikkelsen, R., Sørensen, J. N., Bak, C.
Publication date: 2003

Host publication information
Title of host publication: Proceedings CD-ROM. CD 2
Place of publication: CD-ROM, www.ewea.org
Publisher: European Wind Energy Association (EWEA)
Source: orbit
Source-ID: 25683
Research output: Research - peer-review › Article in proceedings – Annual report year: 2003