Blade-element/momentum theory

Although there exists a large variety of methods for predicting performance and loadings of wind turbines, the only approach used today by wind turbine manufacturers is based on the blade-element/momentum (BEM) theory by Glauert (Aerodynamic theory. Springer, Berlin, pp. 169-360, 1935). A basic assumption in the BEM theory is that the flow takes place in independent stream tubes and that the loading is determined from two-dimensional sectional airfoil characteristics.

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