A simple model of the wind turbine induction zone derived from numerical simulations -
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The induction zone in front of different wind turbine rotors is studied by means of steady-state Navier-Stokes simulations combined with an actuator disk approach. It is shown that, for distances beyond 1 rotor radius upstream of the rotors, the induced velocity is self-similar and independent of the rotor geometry. On the basis of these findings, a simple analytical model of the induction zone of wind turbines is proposed.

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