



Fig. 3 *Left*: dimensional free-wind speeds for the simulations at M0 for case 3. The *blue dotted lines* indicate simulations in close agreement to the specified free wind, represented by the *thick black line*. The *green dashed lines* indicate simulations using different free-wind conditions, and the *red thin solid lines* indicate the free winds for the LES simulations. *Right* profiles of turbulence intensity at M0 for the simulations. *Three lines* indicated with a '1' represent LES simulations with laminar inflow

questionnaire. Zonal LES describes a method that is mostly RANS but switches to LES in flow regions dominated by inherent large-scale unsteadiness. The 11 linearized results are more difficult to subdivide. When queried on the turbulence model used, participants answered 'no model' or chose not to answer. Therefore, the predefined answers may have been inappropriate.

The final two columns of Table A1 give information on the computational efforts utilized by the participants. Column 6 shows the computational time (in minutes, obtained by a wall clock) spent for all four flow cases, and column 7 gives the number of CPUs used to perform these computations. It is evident that the computational time spans from 6 s to 44 days. Readers who attempt to analyze these times should be aware that many of the computations are iteratively solved whereby the user himself chooses the level of convergence. This convergence level is very different for many of the models and has a major influence on the computational time. Although computational time is an important parameter for commercial models, it has not been the focus of the blind comparison. It should also be noted that many of the processes involved in wind-tunnel measurements can be automated, and the time required to perform the experiments can be comparable to many CFD computations.

4.2 Reference Wind

Before the dimensionless results are compared, we discuss the free-wind conditions used in the simulations. A thorough analysis of the measured free winds can be found in Berg et al. (2011).

Figure 3 shows all simulated profiles of velocity and turbulence intensity (see Eq. 16 and subsequent definition) for case 3 (239° direction) at the reference location M0.