Fast models for blockage and gravity-wave effects on wind-farm power output

The authors have addressed most of my comments, either in their responses or through revisions to the manuscript. The revised manuscript can be published after the authors address the following points concerning the newly added Figure 5, the updated Figure 6, and the discussion of the poor performance of APM for cases with low capping inversion heights.

The authors suggest that the incorrect location of the resonant lee waves in APM may be related to the omission of dispersive and turbulent stresses. First, the impact of the incorrectly predicted lee waves and capping inversion displacement on the velocity deficit is evident in Figure 6(c) and appears significant enough that it should not be overlooked. In my understanding, including these stresses would not resolve the incorrectly predicted capping inversion shape.

Second, the multi-scale coupled (MSC) model of Stipa et al. and its application to develop an LES model for wind-farm simulations under CNBL conditions (Stipa et al., 2024b) demonstrate that MSC correctly predicts the lee waves and capping inversion displacement under both subcritical and supercritical conditions. Since MSC and APM are conceptually consistent, this raises the possibility of an implementation issue in APM. I therefore suggest that the authors validate APM against MSC for one of the low-capping-inversion cases.

To further investigate the poor performance of APM for low ABL heights, the authors could plot (P_f/P_0) in Figure 5 as a function of appropriate nondimensional parameters (e.g., Froude numbers), with separate subplots for each ABL height. This may reveal consistent trends across subcritical, critical, and supercritical conditions.