Review of the paper "The Actuator Farm Model for LES of Wind Farm-Induced Atmospheric Gravity Waves and Farm-Farm Interaction".

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Recommendation: Minor revision.

Summary:
This study introduces the actuator farm model (AFM), a novel approach for simulating wind turbines within large eddy simulations (LES). The authors show that the proposed new AFM provides wake deficit profiles, turbine thrust, and power predictions comparable to the actuator disk model (ADM), even with coarser grid resolutions. The topic is of significant interest, the methodology is robust, and the findings contribute substantially to our understanding of modeling wind farms with coarser resolutions. However, several issues must be addressed before the manuscript can be recommended for publication. My comments are categorized as either 'Major concerns' or 'Minor concerns', with the former focusing on conceptual technical critiques, and the latter highlighting grammatical and spelling errors.

Major concerns:

- **(1)**: The abstract mentions the introduction of a "new wall modeling approach" to ensure a correct shear stress profile, but it lacks specific details on the settings or implementation of this approach. Without further information, it's unclear how this wall modeling technique is configured or applied within the simulations. Further details in the main text would likely address these aspects and provide insight into the practical application of this new approach.

- **(2)**: The paper would benefit from explicitly mentioning any additional requirements or considerations for using the proposed AFM model. For example, it should clarify whether specific conditions need to be met, such as ensuring that the center of the turbine is aligned with a grid point when using a very coarse resolution.

References