WESD

Interactive
comment

Interactive comment on "Comparison of OpenFOAM and EllipSys3D for neutral atmospheric flow over complex terrain" *by* D. Cavar et al.

Anonymous Referee #1

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General comments :

This article presents a systematic comparison (almost the same mathematical model, same number of points, etc.) between EllipSys3D and OpenFOAM. The article is of good quality, the results presented are interesting since they are related to 2 important computer codes typically used in the wind energy scientific and industrial communities. The topic discussed (effort to produce appropriate grid, effort of producing results, accuracy of results, computer time) is particularly of high importance to the wind energy industrial community.

I believe it is worth publishing in an archive journal once the following minor comments/errors are treated properly:

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Discussion paper

p.3, line 4: epsilon is the dissipation rate, not dissipation. Please make appropriate changes elsewhere in the text.

p.3, line 24, equation 4: why are you using s here? This is a velocity, but it might be confused with the speedup you are presenting on Fig. 4.

p.4, line 5: I think you should remove the word 'kinematic'.

p.4, line 6, equation (6): adding a figure may facilitate locating the position of the point 'o'.

p.4, line 11, equation (8): is it the expression for epsilon at point 'o' or at the bottom face at z_0? Please make it clear in the final version.

p.4, lines 12-13: you are mentioning 'a von Neumann boundary condition'. This is incomplete information. What is the value of the gradient applied there?

p.5, line 17: equation (11) is different than (8). Is it a typo? Please clarify by commenting in the final version. It is not clear to me since you are writing here that the mathermatical models are identical. Boundary conditions are part of the model for me. Similar comment for Eqs. (4) - (9) and Eqs. (10) - (12).

p.10, Table 2: Is Delta_z the same as in equation (7)?

p.21, line 13: There is a typo here. You have written ElipSys3D.

p. 23, line 24: remove 'a' in front of 'grids'.

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