Responses to referee #2

There is one thing I really miss, and which I think the authors should include in the paper: temperature spectra, or more appropriately temperature spectra converted into available potential energy spectra (APE). The ratio of APE to KE in the $k^{-5/3}$ range should also be given. The results may be compered to the results from other simulations.

Thank you for your comments and suggestion to include the analysis on potential energy, which we believe contributed to improve the paper. We added Sec. 3.2.2 for the definition of new flow statistics and reorganized Sec. 3.3, in particular Fig. 2 that now contains the evolution of the grid-averaged potential energy in addition to kinetic energy. We also wrote a new Sec. 3.6 to present the analysis of potential energy spectra.

Another thing that the authors may consider, is to make a rotational/divergent decompositions of the KE-spectra and compare with previous findings, for example the calculation of LIndborg (JAS, 2007) based on measurements of structure functions.

All the spectra shown in the paper were computed at run time because of the huge memory and CPU resources required to post-process the full 3D dataset generated by Méso-Nh for computational grids of one billion grid points and larger. As a result, we only have stored a few instantaneous solutions for restart. In order to compute the rotational-divergent decomposition we would need to rerun the simulations since we do not have enough samples of the full 3D data to calculate the average of instantaneous spectra. Unfortunately at the present time we do not have computational resources available for these simulations. We took however your suggestion and implemented the spectral decomposition in the code so that it will be available for future LES analysis.