

Interactive comment on “Long-term simulation of the boundary layer flow over the double-ridge site during the Perdigão 2017 field campaign” by Johannes Wagner et al.

Anonymous Referee #1

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General Comments

Using a 49 days long WRL-LES simulation and experimental measurements, the work studies the flow during the intensive observation period of the Perdigão 2017 field campaign. The authors state that during most of the time the flow was thermally driven and used that to study the occurrence of low-level jets. The content is appropriate for ACP, is innovative and the conclusions relevant. It is well described and the results support the conclusions.

Specific Comments

My major concern has to do with coupling WRF with large-eddy simulation in the small-
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est domain. I suppose no mechanism was used to generate fine-scale turbulence at the interface, which leads to small-scales having to be generated inside the domain. The dimensions of the domain and the topography may be sufficient for that, but I would like the authors to show some results supporting that the flow over the double-ridge developed realistic turbulence, such as the comparison of results related to the turbulent field in one of the towers (most likely, T20 or T29).

Also, I think that it would be more convenient that Section 4, model verification, was placed before Section 3, where the results of the model are presented and discussed.

Finally, a minor suggestion, is that the authors calculate the correlation between the WRF results and the measurements shown in Figs. 8 and 9 and use that to quantify the quality of the agreement, in the text around line 208.

Technical Corrections

Line 249: Serra da Estrela is incorrectly written "Estrala"

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-997>, 2018.