

Interactive comment on “A case study of a low level jet during OPALE” by H. Gallée et al.

Anonymous Referee #1

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This is an interesting case where the wind at the top of the boundary layer accelerates in response to the cutoff of convective mixing in the boundary layer. It is mentioned in a MAR focused paper by Gallée in the OPALE collection. In that discussion it is noted that such events were frequent during the OAPLE experiment. In such cases with the simplest dynamics, there is an ageostrophic component of the wind that rotates inertially: That was not found here. However, there are other observations and modeling with similar dynamics involved, associated with seabreezes which were found to rotate both clockwise and anticlockwise, counter to expectations. The authors may want to consult Atmos. Chem. Phys., 14, 13471– 13481, 2014 doi:10.5194/acp-14-13471-2014, Dynamical analysis of sea-breeze hodograph rotation in Sardinia. I am sure there are other examples in the literature. At this point I do not feel that the analysis is complete enough to justify publication as a stand-alone paper in the OPALE collection. Two alternatives might be considered: 1) Include a figure showing the development of

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the LLJ from model and observations in the primary paper in this collection, and/or 2) because these are frequent, develop more statistics on their occurrence and behavior and, hopefully, determine if there is a related signature in the surface chemistry (the was some work done as part of the ANTCI program at the South Pole that showed a LLJ and elucidated the mixing processes below the wind maximum and the effect on the vertical profile of NO_x.)

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 31091, 2014.

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