

Interactive comment on “Momentum and scalar transport within a vegetation canopy following atmospheric stability and seasonal canopy changes: the CHATS experiment” by S. Dupont and E. G. Patton

Anonymous Referee #1

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The results are interesting and important, and are coming from one of the most extensive canopy turbulence experiments to have taken place to date. However, I am still wondering how much of the details we see is indicative of general phenomena to forest turbulence vs. what is highly specific to the exact location where measurements took place. Specifically, the tower was between tree rows. Some discussion of how difference the results may have been had the tower been placed in other locations in the canopy (within the tree row for example, which is technically difficult, but represent a large fraction of the space). Bohrer et al 2009 (BLM) showed from LES results that

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there could be a 10-15% difference in the total flux between near-by locations in a heterogeneous forest. Dupont showed in several papers that the statistics change as a function of the distance from a forest edge. Though this case is not a single edge not a heterogeneous forest, heterogeneity within the forest should play some role. None of this could be addressed until there is a way to measure fluxes over a 2-D sheet (I hope laser technology will soon allow that) but it needs to be discussed.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 6363, 2012.

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