Atmos. Chem. Phys. Discuss., 11, C13774–C13775, 2012
www.atmos-chem-phys-discuss.net/11/C13774/2012/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Transport and mixing patterns over Central California during the Carbonaceous Aerosol and Radiative Effects Study (CARES)" *by* J. D. Fast et al.

Anonymous Referee #2

Received and published: 3 January 2012

This manuscript documents the overall meteorological conditions that affected the transport and mixing of trace gases and aerosols in the vicinity of Sacramento, California, during the Carbonaceous Aerosol and Radiative Effects Study (CARES) field campaign in June 2010, using a combination of measurements from the campaign and modelling results from the Weather Research and Forecasting (WRF) model. The manuscript is well written and provides useful information. The modelling approach has been thought through and is sound. I am pleased to recommend the manuscript for publication in ACP after the authors clarify a few minor points (some editorial), which are detailed in the following. Counting all the lines and referring to the page number:

P29955, L16: Lake Tahoe and the Blodgett Forest site are not visible in Fig. 1. Please indicate where they are located.

P29959, L17: 'CalNex' has not been introduced. Please explain what 'CalNex' is about.

P29959, L22: Please add 'to' before 'predict'.

P29962, L27-28: What is setting the direction of the nocturnal downslope flows? Please explain.

P29963, L10: Please delete 'initially'.

P29964, L21-24: What could be responsible for the differences in ozone concentration between the two sites? Titration in urban areas? Please explain.

P29968, L28-29 and P29969, L1: I have had difficulties in getting this information from Fig. 12a. This needs further explanation/description.

P29969, L6-8: I have had difficulties in getting this information from Fig. 12b. This needs further explanation/description.

P29977, L16: Please order the references by year.

P29979, L10: What would the errors in the boundary-layer growth rate be attributed to? Please explain.

P29990, caption of Table 3: Please delete 'both'.

P29999, caption of Fig. 9: Please add 'were' before 'obtained'.

P30004, caption of Fig. 14: There are no arrows.

P30006, Fig. 16b: Please explain how the total column burden above the PBL has been calculated. The unit of ppb km is not common.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 29949, 2011.