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Interactive comment on “Overview of the Manitou Experimental Forest Observatory: site description and selected science results from 2008–2013” by J. Ortega et al.

Anonymous Referee #3

Received and published: 16 March 2014

This is a detailed overview paper summarizing initial efforts of the BEACHON project at the recently developed Manitou Experimental Forest research site in the Colorado Rocky Mountains. The paper details the long-term measurements at the site and provides highlights of results from several intensive observation campaigns already conducted at the site.

The paper makes a useful contribution to the literature by providing a central reference point for the site that is and will (hopefully) continue to be a focal point for mountain forest systems research in the United States. The paper does a good job of both highlighting the published work from the site and laying the groundwork for ongoing

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work. It is suitable for publication in ACP after some corrections. These necessary changes are described below.

1. In section 1.3, there is an apparent discrepancy here regarding the current status of the micrometeorological measurements at the site. Much of the text and the paragraph here indicate this is an active site (present tense). However, the following paragraph on page 1656 states that measurements were discontinued in 2012. Have measurements since been reinitiated? If not, are they expected to be? It would be very unfortunate if long-term measurements have been discontinued. If that is the case, the manuscript should be modified throughout to better reflect the temporary nature of the site.

2. The label “Chemistry Tower” is sometimes capitalized and sometimes not. Capitalization does not seem necessary, but either way it should be consistent.

3. As other reviewers have noted, the contributions of several different authors is clear in the writing. This occasionally affects the organization of the overall work; there are places where material is presented in a section where it does not fit. The most obvious example is the chemical data presented with the meteorology in section 1.4, but this issue occurs occasionally throughout the manuscript.

4. In section 3.1, the cited paper by Zhao et al. describes the TAG system, but not its coupling to an aerosol mass spectrometer. Is there a better reference available? Has the described work from the MEF site been peer-reviewed and published?

5. Most of the results presented in the paper are described only briefly, because they are based on previously peer-reviewed and published work. This is an appropriate approach for an overview paper. However, in some cases results of advanced measurements and analyses are presented that have not been previously peer-reviewed. This is the case, for example, for the results presented in Figs. 9 and 10. Since these are ‘new’ results, the scrutiny for review is higher, and significantly more detail about the measurements and analysis is required. This detail is not provided in Section 3.3, nor are the appropriate papers cited for readers to understand how the results were

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attained. Similar concerns exist for Figs. 12 and 13 in section 4.2. The authors need to provide sufficient detail that these new results can be fully evaluated, or they should cite appropriate companion papers that contain the details, or these parts of the manuscript should be removed.

6. Figures 8 and 10 do not resolve adequately for publication.

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 1647, 2014.

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