

Interactive comment on “Colorado air quality impacted by long range transport: A set of case studies during the 2015 Pacific Northwest fires” by Jessie M. Creamean et al.

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This paper is well written and presents a detailed case study of transported aerosols from wildfires in the Pacific Northwest contributing to poor air quality during August 2015 in the Colorado Front Range. However, the paper wrongly reports that concentrations of trace gases were not significantly impacted during this period. The study restricts its scope to the period of August 15 – September 2, during which three distinct smoke events occurred. This paper assumes the short periods of time between these events to be representative of normal or baseline conditions. But there is some evidence that the Front Range was still impacted by smoke during the intervening periods and that a comparison of periods prior to and following the smoke events may be more

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appropriate for establishing changes to Front Range air quality. For example a comparison of the concentrations of CO at five CDPHE sites (CAMP, I25, Welby, Fort Collins Mason, and La Casa) between the three smoke events and several weeks before and after the period August 15 – September 2 shows significantly elevated CO during the smoke events. There are also changes in the abundances of O₃ and NO₂. We plan to submit an analysis of the impact of these smoke plumes on gas phase chemistry using 9 weeks of in situ data collected during summer 2015 at the Boulder Atmospheric Observatory (BAO) site. With this in mind, we suggest this paper restrict its focus to the aerosol impacts of the smoke events on Front Range air quality, and to simply remove the section on trace gas impacts. Additionally the broad phrase “air quality” in the title might be revised to “aerosol composition” or something similar to reflect this focus.

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