

## ***Interactive comment on “Source apportionment and impact of long-range transport on carbonaceous aerosol particles in Central Germany during HCCT-2010” by Laurent Poulain et al.***

**Anonymous Referee #2**

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This manuscript presents a thorough analysis of the aerosol composition and their source apportionment at a mountain forest site in Central Germany using detailed aerosol and gas measurements for 40+ days in late-2010. The topic is important, the methodology is clear, and the findings are very well presented. By using detailed particle composition, organic aerosol source apportionment (ME2), and back trajectory analysis, Poulain et al. provide insights into sources of aerosol at this site. Among other things, their findings on more than half of Equivalent black carbon (eBC) coming from long-range transport is especially interesting and potentially relevant for ongoing and

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future studies as well. I think the importance and quality of this manuscript warrants its publication in Atmospheric Chemistry and Physics.

I only have some minor comments:

Fig 1: Consider including Boundary Layer Height (BLH) timeseries either in Fig1 or in Fig S5. Reanalysis BLH (can easily be obtained from ECMWF's ERA5) seems to suggest potential role of changes in BLH height on the total aerosol mass loadings for the observed period.

Mention measurement period in *Introduction* or *Site and instrumentations*.

FigS5: Subplot-4 check colors.

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