

Interactive comment on “Estimating contributions from biomass burning and fossil fuel combustion by means of radiocarbon analysis of carbonaceous aerosols: application to the Valley of Chamonix” by Lise Bonvalot et al.

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This study presents PM10 aerosol data obtained in summer and winter in a valley of the French Alps. Among others, a source apportionment study has been made with the aim to distinguish sources as fossil fuel, biomass burning and biogenic emissions on the base of ^{14}C measurements and levoglucosan. This revealed that summer samples exhibit an important relative contribution of non-fossil sources and a dominant contribution of biomass burning in winter. Interestingly, this very valuable data set and its important conclusions are similar to what was obtained in two source apportionment

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studies (Gelencsér et al., 2007; May et al., 2009) made on the basis of a two year round data set sampled on a weekly basis at five rural/remote sites in Europe. These detailed literature data set reflects atmospheric conditions of 2002/2003 on a European west east transect at altitudes from 40 to 3100 m asl. Given the fact that the source apportionment calculations were very similar than ins this study here, i.e. including also ^{14}C and levoglucosan measurements to distinguish fossil, biomass burning and biogenic emissions, it might be worth that the authors have a look on this dataset and benefit by comparing their new results with these existing literature data.

References:

Gelencsér, A., B. May, D. Simpson, A. Sánchez-Ochoa, A. Kasper-Giebl, H. Puxbaum, A. Caseiro, C. Pio, and M. Legrand (2007), Source apportionment of PM2.5 organic aerosol over Europe: Primary/secondary, natural/anthropogenic, and fossil/biogenic origin, *J. Geophys. Res.*, 112, D23S04, doi:10.1029/2006JD008094.

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