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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Radiocarbon analysis in an Alpine ice core: record of anthropogenic and biogenic contributions to carbonaceous aerosols in the past (1650–1940)" *by* T. M. Jenk et al.

Anonymous Referee #1

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General Comments:

This is a useful paper that contributes to the databank concerning elemental and organic carbon concentrations. An additional feature of the paper is a partition of carbon into biogenic and fossil fuel burning components. It looks that trying to explain each minor feature of the data carried the authors away. With a few measurements available often any single feature depends on one measurement and thus may be the results of an error in procedure, contamination during the process, or as you say "the presence of mineral dust". The results should be accepted as an input into the global data bank without a need to explain each minor feature; with the future increase of data points in

global, regional and local carbon inventory the significance of individual measurements will be judged in the future.

Specific Comments:

p. 5906 Please don't claim "We present a first long-term record Ĕ..". The following should be sufficient "We present a long-term record Ĕ..".

p. 5907 When you discuss which aerosol will warm or cool it would be nice to give credit to the original paper that attacked the problem (Science 183, 75-77, 1974).

p. 5911 Multiplying the results by a factor of 2 looks suspicious. The need of that should be more clearly explained. Can the loss of carbon and the need of multiplication be prevented?

p. 5914 The average error of 4% and 18% for OC and EC seems to be quite low. Is this a total error or just repeatability of the procedure?

p. 5914, 5916, 5917 Blaming the Sahara dust seems suspicious. Did you detect some brownish spots on filters after heating them to 650 deg C? If not, the dust should not be blamed and there might be some other reason for disagreement. I don't think it is fair to blame an unknown amount of dust for each point of the data that does not agree with you expectation.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 5905, 2006.

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Interactive Comment