

Interactive comment on “Tropospheric aerosol scattering and absorption over Central Europe: a closure study for the dry particle state” by N. Ma et al.

Anonymous Referee #2

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This manuscript provides a 5 year long time series of atmospheric aerosol optical properties data in Central Europe. This work could act as a reference for presenting long time series of aerosol optical properties, uncertainties of the measurements, quality control and air mass origin dependence. Therefore it should be published after only few minor revisions. As a general comment I would like to see a discussion about diurnal variations of the parameters discussed in the manuscript.

Specific comments.

Page 27813, Line 4: Update reference to IPCC 2013 (-0.27 and -0.55 Wm⁻²)

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Page 27815, Line 5: In Table 1 PM₁₀ values are reported and the corresponding measuring methodology should be described.

Page 27815, Line 26: Why have these numbers been chosen? An explanation or at least a reference would be useful

Page 27818, Line 25: During night the stability of the atmosphere is quite different than the day. The approach the authors follow is representative for the day but not for the night, as stated in the following sentence there is usually a development in the boundary layer. Some sensitivity test would be useful or at least stating it in the text.

Page 27825, Line 18: There is a more recent study for Finokalia station with longer time series, Kalivitis et al., Atmospheric Research, 2011.

Page 27827, Line 5: As already stated in the previous paragraph during winter the emissions from combustion sources are higher and this should be reflected in ω in the region and therefore this must be the reason for the ω drop.

Page 27826, paragraph 3.4: Accumulated precipitation is higher in the summer months rather than the winter ones in the region under study and the rain/wash out processes should also be taken into account to interpret the data series.

Technical Corrections

Page 27816, Line 1: “Estimatie”, change to “estimate”.

Page 27816, Line 12: “the the”, change to “the”.

Page 27824, Line 9: “in Fig.2”, missing bracket.

Page 27824, Line 10: “in Fig.2”, missing bracket.

Page 27831, Line 15: “Results shows”, change to show.

Page 27832, Line 12: “showeda”, change to showed a.

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