Supplement of Atmos. Chem. Phys., 17, 4229–4249, 2017
http://www.atmos-chem-phys.net/17/4229/2017/
doi:10.5194/acp-17-4229-2017-supplement
© Author(s) 2017. CC Attribution 3.0 License.

Supplement of

Evaluation of the absorption Ångström exponents for traffic and wood burning in the Aethalometer-based source apportionment using radiocarbon measurements of ambient aerosol

Peter Zotter et al.

Correspondence to: André S. H. Prévôt (andre.prevot@psi.ch)

The copyright of individual parts of the supplement might differ from the CC-BY 3.0 licence.
Figure S1: Residuals of EBC\textsubscript{TR}/EBC compared to EC\textsubscript{F}/EC (\(\Delta \text{EBC}_{\text{TR}}/\text{EBC}\)) as a function of EBC\textsubscript{TR}/EBC calculated with \(\alpha_{\text{TR}} = 0.90\) and \(\alpha_{\text{WB}} = 1.68\) and using the wavelength pair 470 nm and 950 nm. The brown and black dashes lines denote the residuals of EBC\textsubscript{TR}/EBC with respect to an error of \(\alpha_{\text{WB}}\) and \(\alpha_{\text{TR}}\) (\(\Delta \alpha_{\text{WB}}\) and \(\Delta \alpha_{\text{TR}}\)), respectively, and the solid coloured lines represent the errors in EBC\textsubscript{TR}/EBC with respect to errors in both, \(\alpha_{\text{WB}}\) and \(\alpha_{\text{TR}}\).
Figure S2: Residuals of EBC_{TR}/EBC compared to EC_{F}/EC (ΔEBC_{TR}/EBC) as a function of EC_{F}/EC for α_{TR} = 0.8 and α_{WB} = 1.4-2.2 and using the wavelength pair 470 nm and 950 nm. Average ΔEBC_{TR}/EBC values for EC_{F}/EC bins of 0.1 are displayed. The dashed grey line denotes the best α pair (α_{TR} = 0.9 and α_{WB} = 1.68) as obtained in Sect. 3.2.1 and the dark and light grey shaded areas mark the 1σ (standard deviation) and 3σ of ΔEBC_{TR}/EBC per EC_{F}/EC bin for this best α pair.
Figure S3: Diurnal cycles of EBC for the stations MAG, PAY and ZUR - 1h averages from 2009 to 2012. EBC_{WB} and EBC_{TR} were calculated using the best \( \alpha \) pair \( (\alpha_{TR} = 0.9 \) and \( \alpha_{WB} = 1.68 \) ) as obtained in Sect. 3.2.1 and using the wavelength pair 470 nm and 950 nm. The split uncertainty between EBC_{WB} and EBC_{TR} \( (\Delta EBC_{TR}/EBC) \) is max. 0.04 \( \mu g \) m\(^{-3}\).

Figure S4: Diurnal cycles of EBC for ZUR - 1h averages for winter week days from 2009 to 2012 calculated with different \( \alpha \) combinations and using the wavelength pair 470 nm and 950 nm.