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Influence of the vapor wall loss on the degradation rate constants in chamber experiments of levoglucosan and other biomass burning markers

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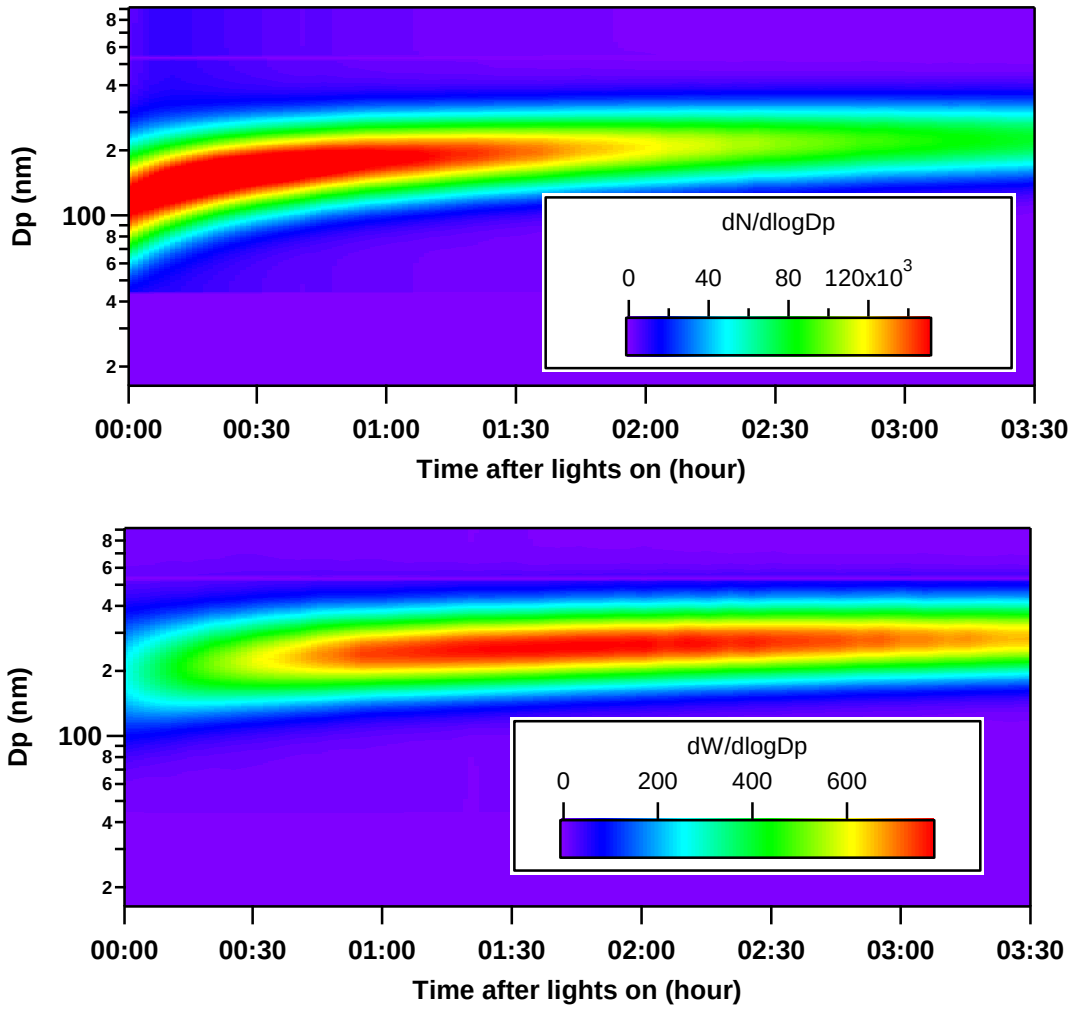

Figure S1. Example of the monomodal distribution of the aerosol (number concentration (top) and mass concentration (bottom) (Experiment 1).

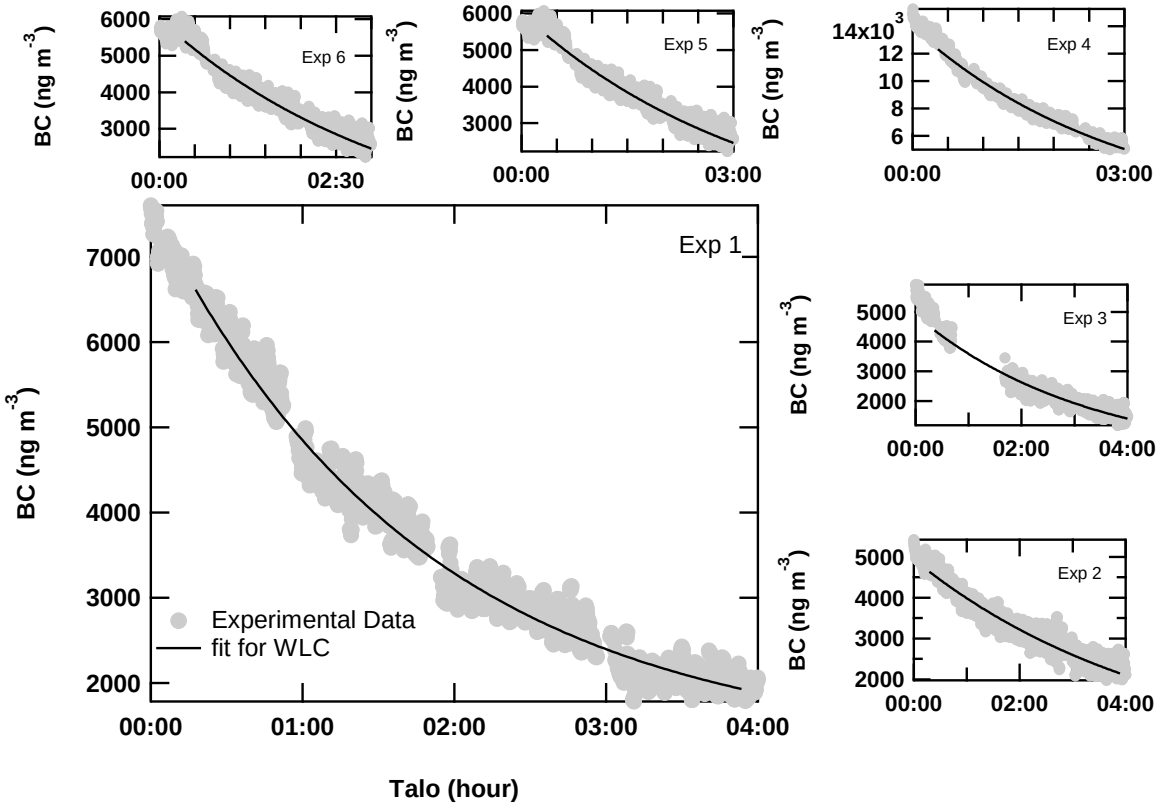

Figure S2: Exponential fit of the decay of BC applied in order to retrieve a constant particle wall loss rate.

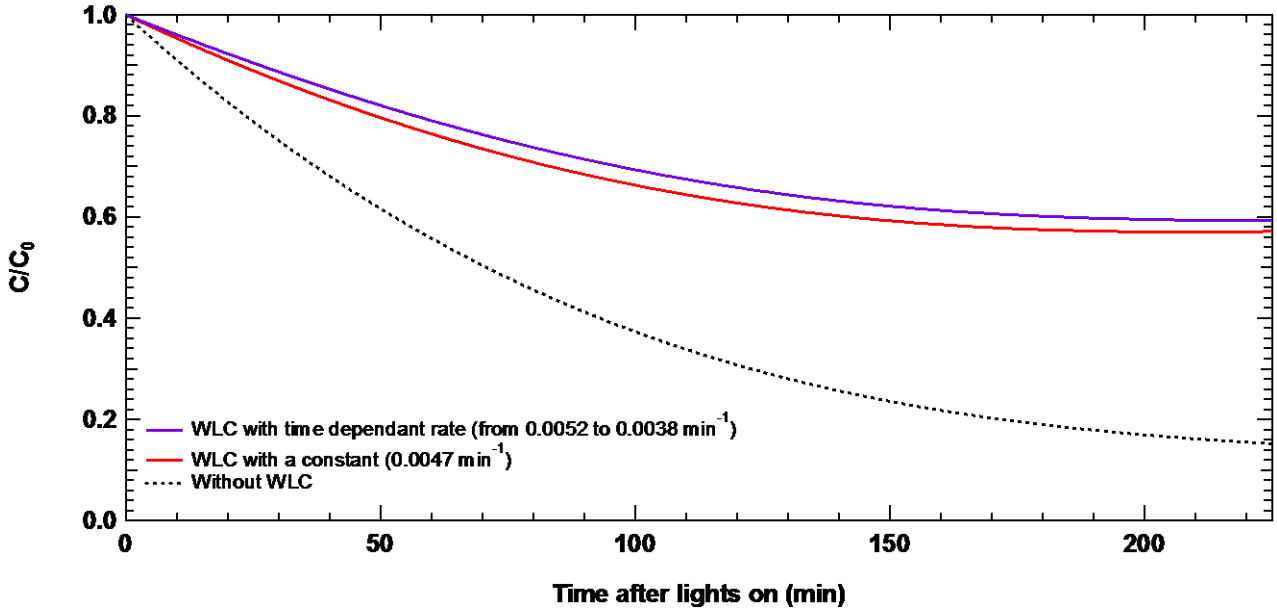

Figure S3. Wall loss correction of the normalized levoglucosan signal (modeled from experimental data set) using a constant rate (0.0047 min^{-1}) and time dependent rate (averaged from all the experiments and based on the fitting of the logarithmic form of the decay on a 30 minutes time interval).

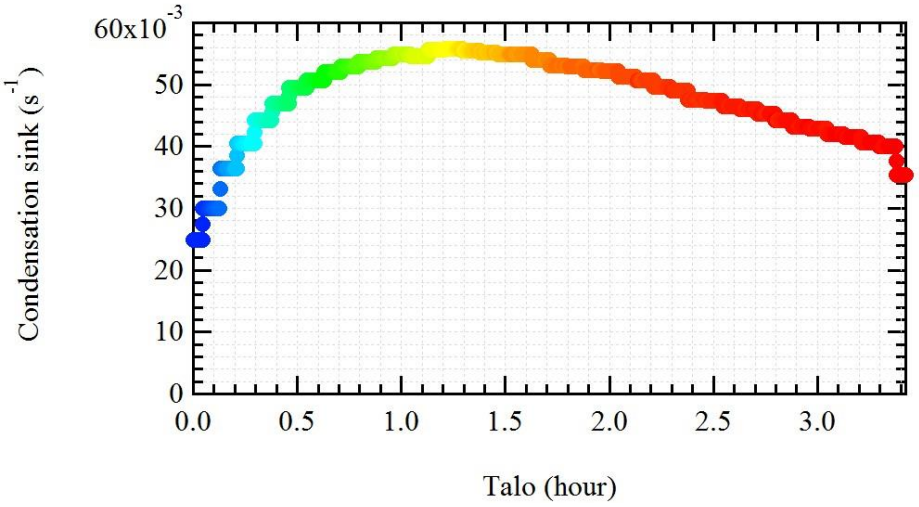

Figure S4: Calculate condensation sink k_{sink} (s^{-1}) with an accommodation coefficient α of 0.1.

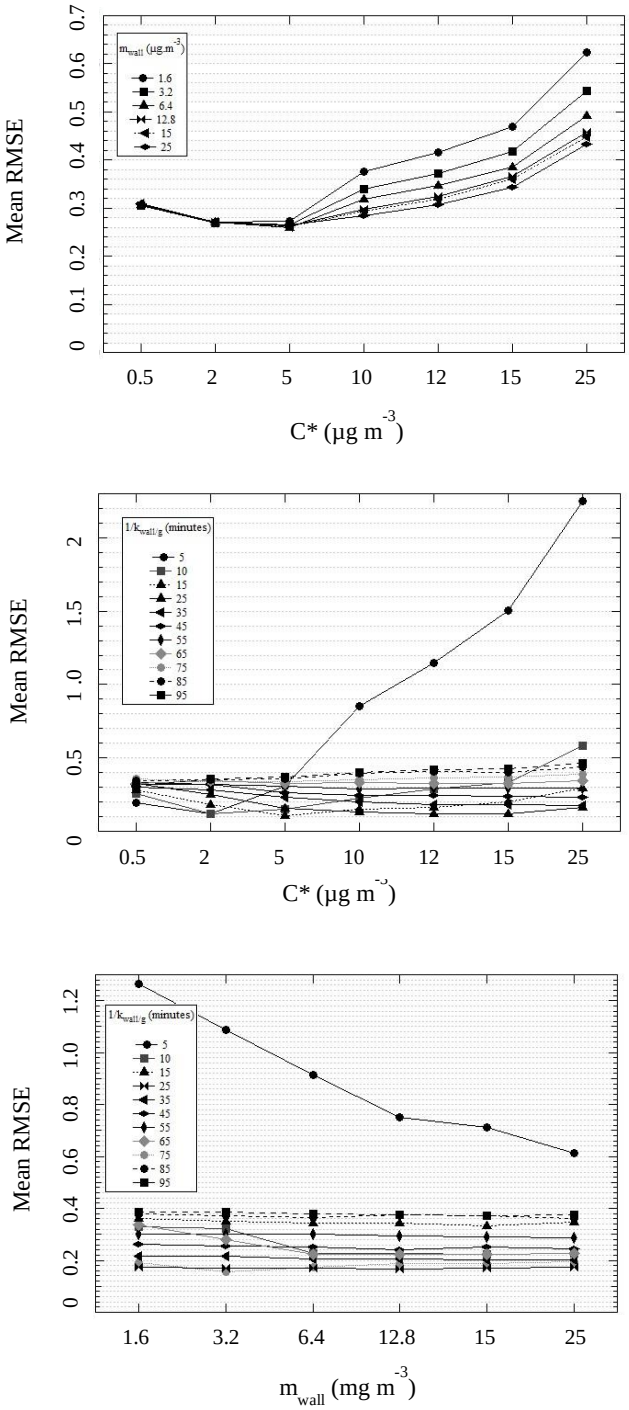

Figure S5: Influence of the factors on the model in the case of levoglucosan – mean effect plots for RMSE.

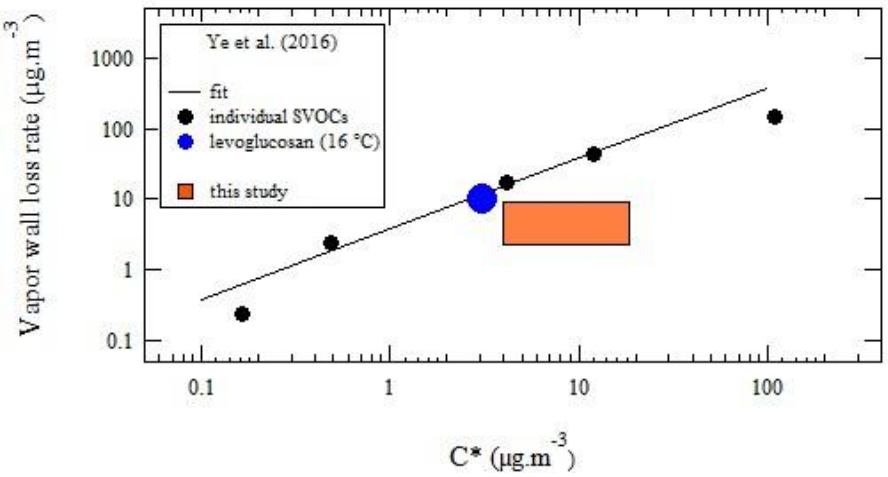

Figure S6: Comparison of our results for the saturation vapor concentration C^* and vapor wall loss rate $k_{wall/g}$ to those by Ye et al. (2015).

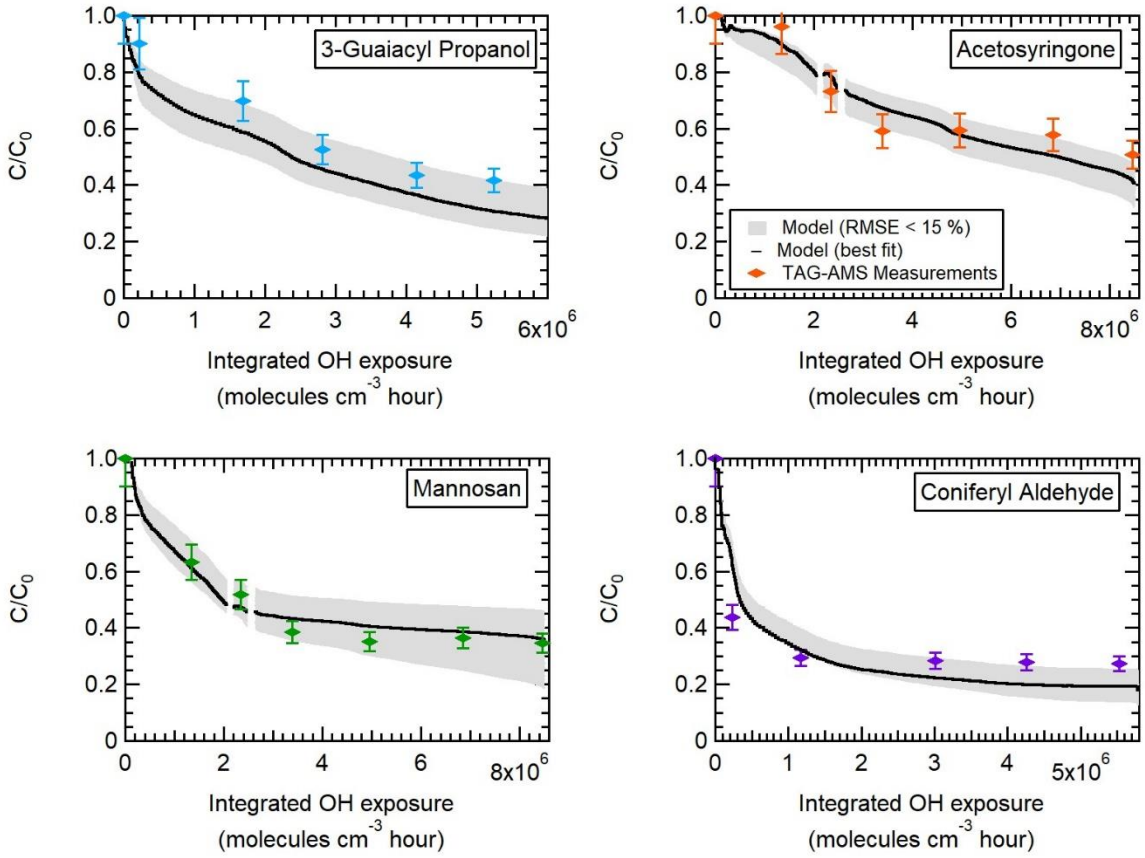

Figure S7: Observed and modeled evolution during aging of the particulate-phase concentration corrected for wall loss (and normalized to the initial concentration) of several BBOA markers. The colored markers are the TAG-AMS measurements, the solid black line represents the best fit, and the grey area is all the individual solutions with a RMSE < 15 %. Only one replicate is shown for each compounds (exp. 5 for 3-guaiacyl propanol, exp.6 for acetosyringone and mannosan, and exp.2 for conyferyl aldehyde.)