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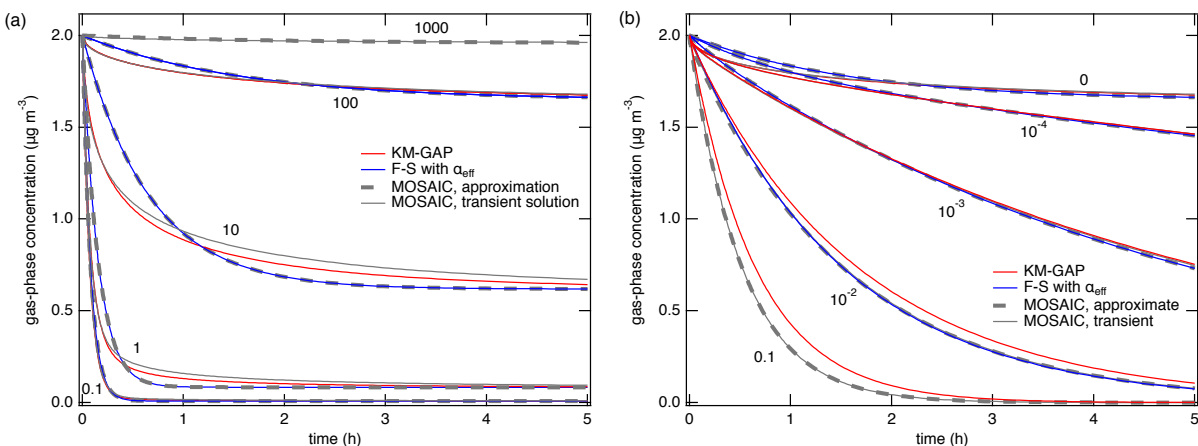
Supplement of

Mass accommodation and gas–particle partitioning in secondary organic aerosols: dependence on diffusivity, volatility, particle-phase reactions, and penetration depth

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 2 **Figure S1.** Temporal evolution of the gas phase concentration of organic compounds interacting
 3 with semisolid seed aerosol particles under the same conditions as in Fig. 2 but with $\alpha_s = 0.1$
 4 instead of 1. (a) Non-reactive partitioning of compounds with different volatilities ($C^0 = 0.1$ to
 5 $1000 \mu\text{g m}^{-3}$) and (b) partitioning of semi-volatile compounds ($C^0 = 100 \mu\text{g m}^{-3}$) undergoing
 6 particle-phase reactions with different first-order loss rate coefficients ($k_b = 10^{-4}$ to 0.1 s^{-1}). The
 7 red lines are simulated with KM-GAP and the blue lines are simulated by an aerosol dynamic
 8 model that employs the Fuchs-Sutugin approximation with α_{eff} for non-reactive partitioning (a)
 9 and for reactive uptake (b). The gray lines represent the MOSAIC approximate (dashed) and
 10 transient solutions (solid) (Zaveri et al., 2014).