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*Supplement of*

**Impact of chamber wall loss of gaseous organic compounds on secondary organic aerosol formation: explicit modeling of SOA formation from alkane and alkene oxidation**

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Figure S1. Comparison between measured (black) and simulated SOA yields for different chemical families as a function of carbon chain length or structure of the carbon backbone. Simulations are shown with wall loss using a value of  $C_w/(M_w\gamma_w)=120 \mu\text{mole m}^{-3}$  (circles) or  $50 \mu\text{mole m}^{-3}$  (diamonds) for all secondary species and a  $\tau_{gw}$  of 10 min (yellow), 30 min (blue) or 60 min (green).

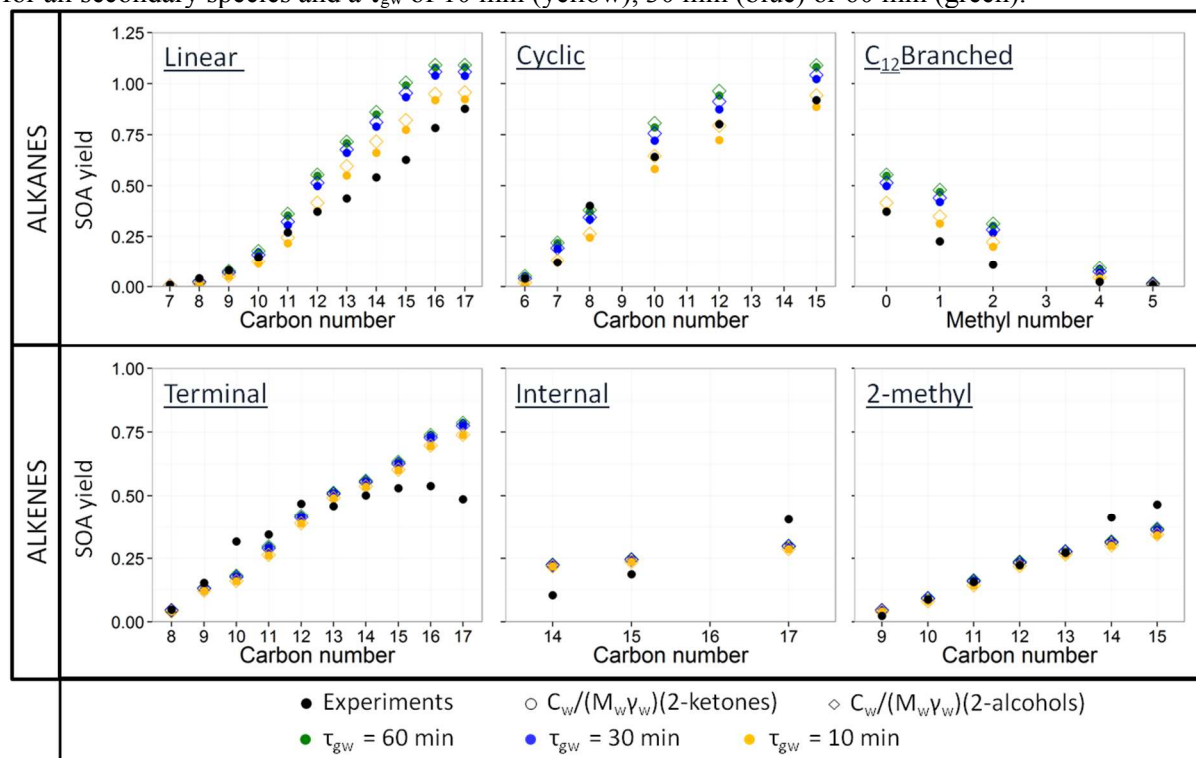


Figure S2. Comparison between measured (black) and simulated SOA yields for the different chemical families as a function of carbon chain length or structure of the carbon backbone. Simulations using ATK configuration (circles) and VER configuration (squares) are shown without wall loss (red) and with wall loss using a value of  $C_w/(M_w\gamma_w)=120 \mu\text{mole m}^{-3}$  for all secondary species and a  $\tau_{gw}$  of 10 min (yellow)

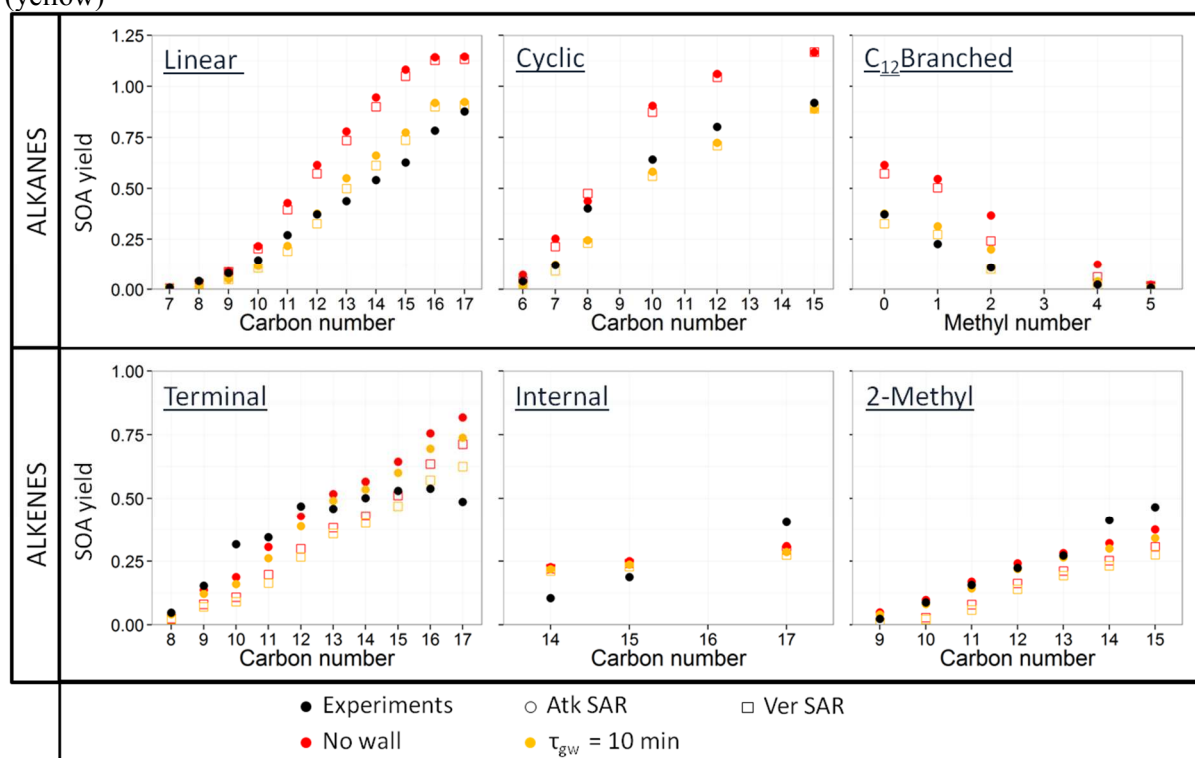


Figure S3. Simulated fraction of DHF reacting with OH, O<sub>3</sub> and NO<sub>3</sub> during hexadecane oxidation. The following rate constants are used:  $k_{\text{DHF}+\text{OH}}=2.18\times 10^{-10}$  molecule<sup>-1</sup> cm<sup>3</sup> s<sup>-1</sup>;  $k_{\text{DHF}+\text{O}_3}=3.49\times 10^{-15}$  molecule<sup>-1</sup> cm<sup>3</sup> s<sup>-1</sup>;  $k_{\text{DHF}+\text{NO}_3}=1.68\times 10^{-10}$  molecule<sup>-1</sup> cm<sup>3</sup> s<sup>-1</sup> (Martin et al., 2002).

