A model study on investigating the sensitivity of aerosol forcing on the volatilities of semi-volatile organic compounds

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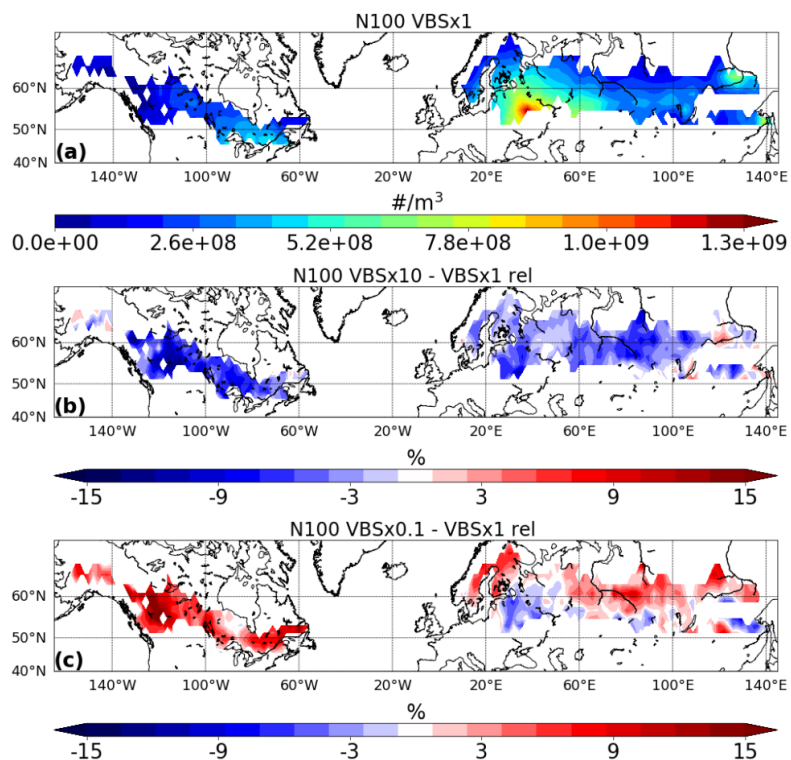
Figure S1. Simulated CCN concentration of **(a)** VBS×1 and the relative difference between **(b)** VBS×10 and **(c)** VBSx0.1 with respect VBS×1 at 900 hPa
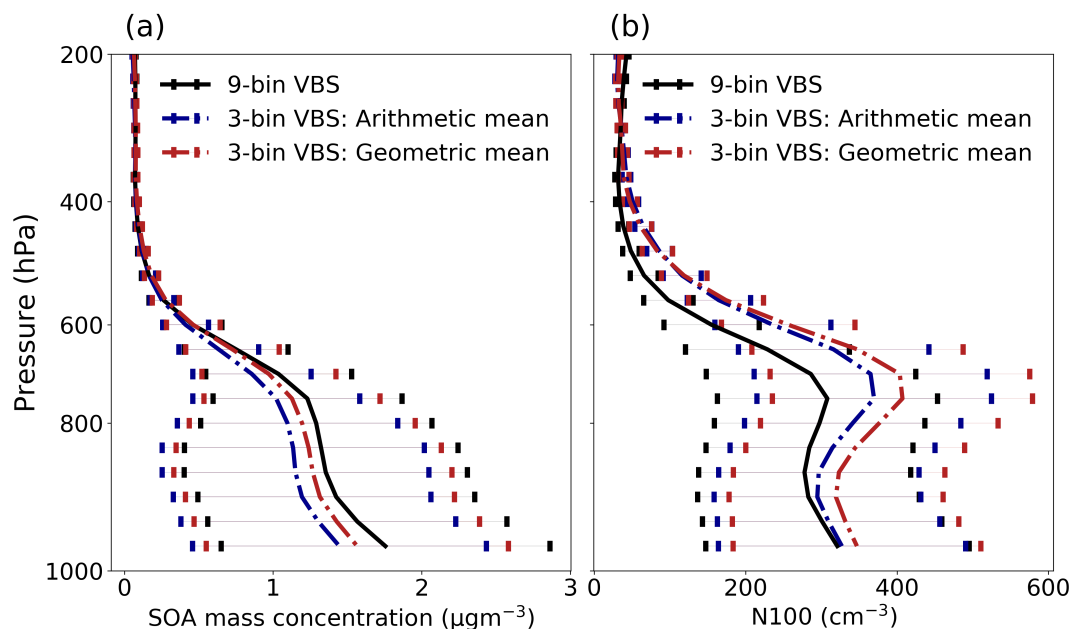
Figure S2. Mean vertical profile of (a) N100 and (b) SOA mass concentration for the 9-bin VBS setup, 3-bin VBS setup with volatility calculated using Arithmetic mean, and the 3-bin VBS setup with volatility calculated using Geometric mean . The error bar depicts the one-sigma standard deviation over each model levels.
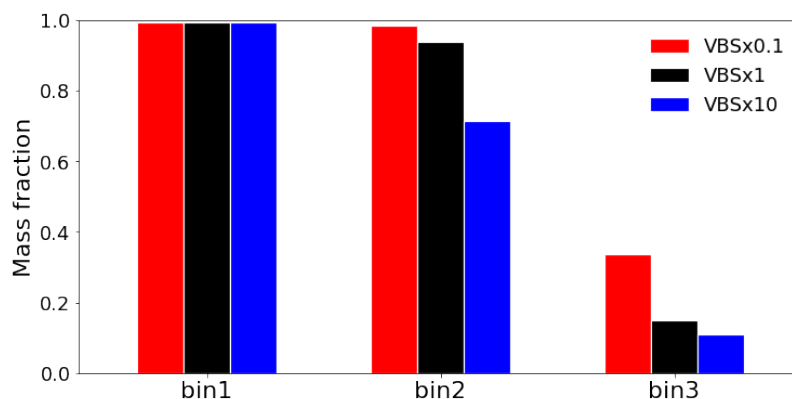

Figure S3. Fraction of particle phase mass concentration close to the ground level (particle/(particle+gas)) in each VBS bins with changes in volatility using the 3-bin VBS setup. The x-axis values show the C_{sat} of that bin in the VBS$\times$1 simulation
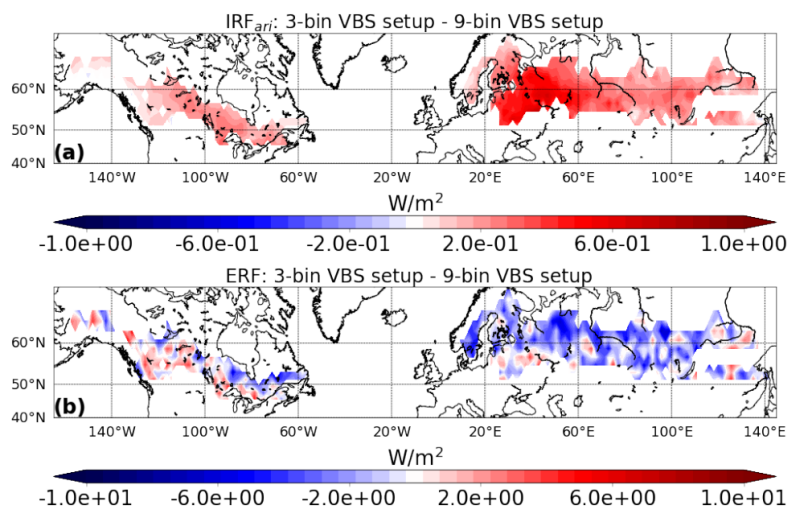
Figure S4. (a) TOA IRF$_{ari}$, **(b)** ERF for the 3-bin VBS setup with respect to 9-bin VBS setup analysed over the boreal region.