

Supplement material:
**A three-dimensional model study of
methanesulphonic acid to non sea salt sulphate ratio
at mid and high-southern latitudes**

H. Casteburnet¹, P. Martinerie¹, C. Genthon¹, and E. Cosme¹

¹Laboratoire de Glaciologie et Géophysique de l'Environnement, UMR 5183, 38402 Saint Martin d'Hères cedex, France

²Laboratoire des Ecoulements Géophysiques et Industriels, UMR 5519, 38402 Saint Martin d'Hères, France

Correspondence to: H. Casteburnet
(hcasteburnet@gmail.com)

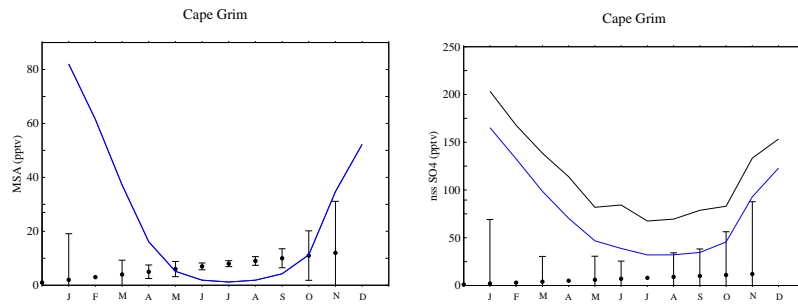


Fig. 1. Seasonal variations of MSA and nssSO₄ at Cape Grim station, for simulations REF (blue) and REF-ANTH (black). Observations (black circles) were provided by Dr. Keywood (personal communication) for 1988-2006.

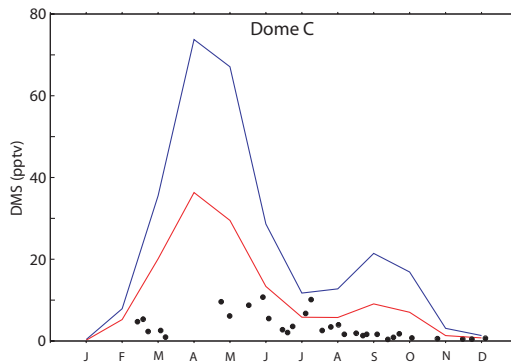


Fig. 2. Seasonal variations of DMS at Dome C, for simulations REF (blue) and TESTO₃ (red). Observations (black circles) were provided by CESOA for 2006.

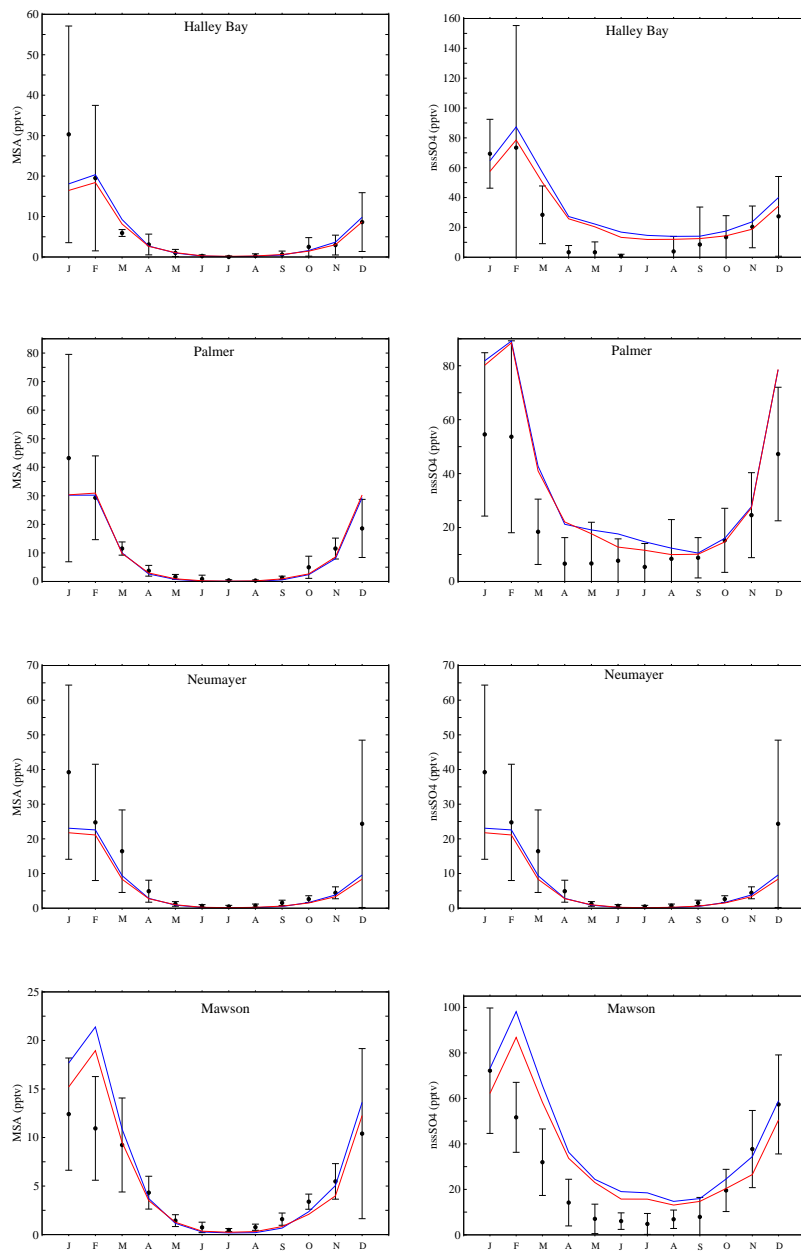


Fig. 3. Observed (circles) and simulated seasonal variations of MSA (left panel) and nssSO₄ (right panel) at Halley Bay, Palmer, Neumayer and Mawson stations, for simulations REF (blue) and TESTO₃ (red). Inter-annual variability of measured species is represented (black bars).

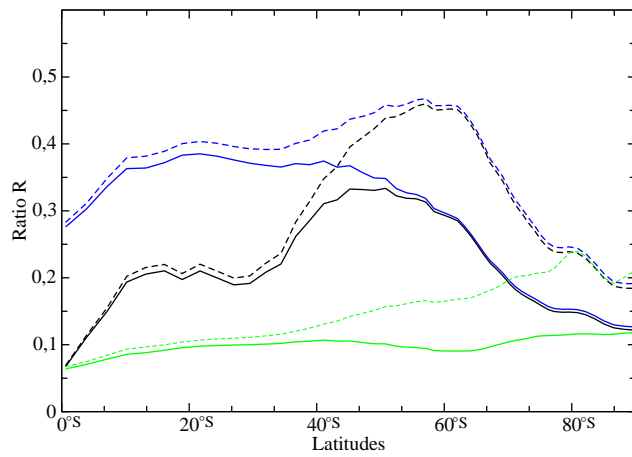


Fig. 4. Modelled MSA to nssSO₄ ratio in the South Pacific Ocean. Annual and zonal mean modelled R_{sim} and R_{psim} are represented by solid and dashed lines respectively. Simulations results are represented in blue for REF, in black for REF-ANTH and in green for the simulation using the previous chemistry scheme (Cosme et al., 2002).