

# How well can we predict dimethylsulfide emissions into the North Atlantic atmosphere?

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Atmospheric dimethylsulfide (DMS) and its oxidation products influence the formation of aerosol and clouds, which have an important impact on radiative forcing. Accurate modelling of atmospheric DMS and aerosol/clouds is contingent on how well we can estimate seawater DMS concentrations and sea-to-air fluxes. Surface seawater DMS was measured at high frequency as part of the North Atlantic Aerosol and Marine Ecosystem Study (NAAMES) using atmospheric pressure chemical ionization mass spectrometry. NAAMES cruises made a repeat survey along a latitudinal transect during November 2015, May 2016, September 2017 and March 2018. NAAMES data are compared with three climatological estimates of seawater DMS (the global database and climatology, a neural network model and a state-of-the-art empirical model). I will discuss the ability of the climatologies to reproduce seawater DMS in the North Atlantic in terms of the seasonal trend and the spatial/temporal scales of variability. Finally, I will discuss how estimates of DMS over large spatial scales might be improved in the future.