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## Predictability of seawater DMS during the North Atlantic Aerosol and Marine Ecosystem Study (NAAMES)

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Surface ocean dimethylsulfide (DMS) was measured during four shipboard field campaigns conducted during the North Atlantic Aerosol and Marine Ecosystem Study (NAAMES). Variations in surface seawater DMS are discussed in relation to biological and physical observations. The interplay of biomass and physics influences DMS concentrations at regional/seasonal scales and at smaller spatial and shorter temporal scales. Observations are compared with the best-available climatological predictions of seawater DMS, including output from an empirical algorithm and a neural network model. The input terms common to the algorithm and neural network approaches are biological (chlorophyll) and physical (mixed layer depth, photosynthetically active radiation, seawater temperature). DMS concentrations tend to be under-predicted and the episodic occurrence of higher DMS concentrations is poorly predicted. The choice of climatological seawater DMS product makes a substantial impact on the estimated DMS flux into the North Atlantic atmosphere. These results suggest that additional input terms are needed to improve the predictive capability of current state-of-the-art approaches to estimating seawater DMS.