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Controls on upper ocean nutrient concentrations in the North Atlantic

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As part of the CAVASSOO project surface nutrient samples were taken on route from Portsmouth to Martinique and the Dominican Republic between 2002 and 2005. We present a subset of the large dataset that is still being collected. It provides year round surface nutrient data from the subtropical to subpolar North Atlantic. Seasonal and inter-annual variations in nutrients are described along route in relation to mixed layer depth information from the FOAM model. From the low productivity regions of the subtropical gyre to the higher productivity waters to the north and east the surface nitrate concentrations and salinity values increase while temperature decreases. Winter surface nitrate concentrations increase earlier in the winter in the north and east regions, corresponding to the increase in mixed layer depth. Depletion of nitrate in the spring occurs later in the year to the north and east following the movement of the 'spring bloom'. Correlation of sea surface temperature and winter surface nitrate varies between regions.