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Measurements of N_2O concentrations in the surface ocean with an off-axis ICOS analyser

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Nitrous oxide N_2O is an important greenhouse gas with increasing atmospheric concentrations. Its atmospheric, terrestrial and marine sources and sinks, however, are not very well constrained [1]. Furthermore, N_2O is the main sources of ozone depleting NO_x in the stratosphere [2,3].

An off-axis ICOS (Integrated Cavity Output Spectroscopy) N_2O/CO analyzer (*Los Gatos Research, Inc.*) was deployed during the AMT20 cruise of the Atlantic Meridional Transect programme from Southampton, UK to Punta Arenas, Chile (12 October – 25 November 2010). The analyser was used in combination with an equilibrator, enabling continuous measurements of dissolved N_2O in surface waters. Additionally, the concentrations of N_2O in marine air were determined on a regular basis. Here we present first results of testing this novel measurement system at sea.

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(3) Ravishankara, A. R.; Daniel, J. S.; Portmann, R. W. Science 2009, 326, 123.