



Production and sea-air flux of nitrous oxide.

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Nitrous oxide (N_2O) is one of the greenhouse gases and its Global Warming Potential (GWP) is about 300 times greater than carbon dioxide (CO_2). The atmospheric concentration of N_2O increased from 270 ppb in pre-industrial times to 319 ppb in 2005 (IPCC AR4, 2007). N_2O is produced as by-products of nitrification and as intermediate - productions of denitrification by microbe. The stable isotopes of N_2O information can be use for elucidate its production and sea-air flux. Ocean is a large emission source of N_2O , and it share about 21.5% of total sources (IPCC AR4, 2007).

We report concentration and isotopic ratio, calculated production volume and rate in the ocean and sea-air flux of N_2O from samples collected in the Pacific Ocean. The samples were gathered during an expedition that took place in Eastern Subtropical North Pacific (October 31st, 2005 - November 24th, 2005) and Western Tropical Pacific Ocean and Eastern Tropical Indian Ocean (November 28th, 2006 – January 20th, 2007). In the periods of these expeditions, we collected seawater and ambient air samples, and also on-board incubation experiments were performed.