

ANNUAL REPORT ON GEOTRACES ACTIVITIES IN NORWAY
JUNE 2013 – JUNE 2014

New runs on the simulation of radionuclides over the Anthropocene period:

Repeated series of model simulations over the Anthropocene (calendar years 1700 - 2300) have been carried out with the HAMOCC2s biogeochemical ocean general circulation model (annual mean, fixed ocean circulation, realistic CO₂ emissions to the atmospheric reservoir which is coupled to the water column). We explored primarily the scavenging of the radionuclide Th-230. It turned out that still large uncertainties exist on how to choose the equilibration constants (K_d values) and potential particle specific attachment of Th-230 in simulations. Experiments have been carried out in particular on simulating Th-230 in areas which are poor in suspended CaCO₃ (which potentially is the main carrier phase of Th-230). In these areas, small CaCO₃ concentrations could lead to assumed too high reactive surface areas (many tiny particles) which would result in a too strong reduction of the dissolved phase of Th-230 at low particle concentrations. Shifting to alternative carrier species (such as particulate organic carbon or biogenic silica) has been explored in sensitivity experiments as well.

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