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 (Kd 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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