

Theme 5
Ocean Acidification in the NCAR CSM1.4-carbon

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The uptake of anthropogenic carbon will modify the pH and the saturation state of ocean water with respect to calcite minerals. Here, the change in the saturation state of the mineral aragonite is analyzed for a simulation of the SRES A2 scenario with the NCAR carbon cycle-climate model CSM1.4-carbon. It is projected that high-latitude waters will first become undersaturated by 2050 AD. Model results are compared with estimates of the saturation state from the GLODAP and WOA1 data sets. The model matches observation-based estimates reasonably well. It slightly underestimates the carbonate concentration at the surface, in particular in the North Pacific, whereas the concentrations at depths below 500 m are somewhat too high in the model.