



Anthropogenic CO₂ and acidification in the Arctic Ocean

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The concentration and inventory of anthropogenic CO₂ (C_{ant}) in the Arctic Ocean is poorly known despite its relatively large volume of well ventilated waters. We use a synthesis of available CFC and SF₆ measurements from close to ten thousand individual tracer samples to calculate the Arctic Ocean C_{ant} inventory. For these calculations we have used the Transit Time Distribution (TTD) method, where the TTD is calculated from the tracer data, and then applied to the known atmospheric CO₂ increase, assuming time-invariant air-sea equilibrium of CO₂, to calculate the oceanic C_{ant} content. The C_{ant} field is then integrated over the Arctic Ocean and the inventory is calculated. We find that the Arctic Ocean holds about 2 % of the global oceanic C_{ant} inventory. We will show horizontal distributions of C_{ant} as well as depth integrated profiles from the individual basins.