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SENSITIVITY OF INVERSION ESTIMATES OF ANTHROPOGENIC CARBON AIR/SEA FLUXES TO TRANSPORT UNCERTAINTY

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New inversion estimates of anthropogenic carbon fluxes for 29 discrete ocean regions are used to study pathways of upper ocean ventilation. Sensitivity of the flux estimates to transport uncertainty is investigated using five different OGCM integrations. Global total uptake of anthropogenic carbon for 2000 is estimated to be 2.2 PgC/yr +/− 0.4 (two S.D.). The inverse analysis shows which geographic areas of the world ocean are the most important sinks for anthropogenic carbon, and how robust these regional flux estimates are in the face of model biases.