



Sensitivity of the Global Thermohaline Circulation to deep Vertical Mixing.

D. Iudicone (1), G. Madec (2), J. C. Dutay (3), S. Speich (4), **S. Calmanti** (5).

(1) SZN, Napoli, Italy, (3) LODYC, Paris, France, (4) LSCE, Gif sur Yvette, France, (5) LPO, Brest, France, (2) ENEA, Roma, Italy.

We use a coupled ice-ocean model to investigate sensitivity the global thermohaline circulation to changes in the deep mixing. Two model steady states are computed by employing uniform vertical mixing and linearly increasing values of mixing towards the ocean's bottom. The recent availability of CFC and C14 data prompted to a model validation via comparisons with the corresponding off-line simulated tracer data.

The observed C14 content fall inside the range defined by the two simulation, where the variable mixing simulation overestimates the tracer content, while the uniform mixing simulation underestimates it. For CFC's both simulations show a tendency to overestimate the observed tracer content.

The Pacific meridional heat transport is found to be particularly sensitive to changes in the deep mixing. A detailed comparison of the two model configurations is presented by means of both lagrangian diagnostic and direct insight in the local balance of eulerian fields.