

Ocean Carbon Uptake Working Group Report

In this brief presentation we will summarize the goals of the working group, main achievements so far, and problems encountered, both scientific and logistical. We will discuss the scientific questions identified, and near and long term objectives.

The main goals include defining common physical and biogeochemical metric to guide the model-model and model-data comparison, and coordinating the evaluation of CMIP5 experiments in different regions (spatial pattern characterization).

During the WG meeting in San Francisco in December 2012, we identified problems and key uncertainties in the model representation of the carbon cycle. During the meeting and subsequent telecons we discussed a number of ocean specific issues that need to be addressed to better constrain and understand the oceanic carbon cycle and its model representation, including problems in the representation of the ocean carbon uptake, difficulties in defining the anthropogenic contribution, the importance of the model representation of mode water formation, of subduction zones and of mixed-layer depth.

We will also present the upcoming NCAR ASP Summer Colloquium “Carbon-climate connections in the Earth system” and Researcher Workshop “Key uncertainties in the global carbon cycle”, organized by the working group (80% of the members are involved as speakers, lecturers and/or organizers) to be held in Boulder, CO , July 19 – August 16, 2013. The Colloquium and Workshop for the first time bring together students and scientists from both ocean and land carbon communities, and aim at identifying common research questions and uncertainties in understanding, modeling and measuring the carbon cycle.