



## OCB Ocean Carbon Uptake in CMIP6 Models Synthesis and Intercomparison Workshop

December 8-9, 2018  
Hilton Garden Inn, 815 14th St NW, Washington, DC

### DRAFT AGENDA

#### Saturday, December 8

8:00 Coffee and breakfast/registration open

8:20 John Dunne (NOAA/GFDL) Goals, logistics and highlights of applicant responses

8:30 Matthew Long (NCAR) Introduction of community tools for model and data analysis

**1) Summarize high profile CMIP5 Ocean Carbon Uptake analyses and challenges.**

8:55 James Orr (IPSL) High profile summary of CMIP5/AR5 and CMIP6/AR6

9:15 Forrest Hoffman (ORNL) Nonlinear interactions between climate and CO2 drivers of marine and terrestrial carbon cycle changes

9:40 Galen McKinley (Columbia) Forced changes and internal variability in the ocean carbon sink

10:05 Nikki Lovenduski (UC Boulder) Predicting near-term changes in ocean carbon uptake

10:30 Discussion - Make sure everybody knows the challenges and opportunities, the timeline, and can identify the resources/experts available in the room to make progress.

10:50 Coffee Break

**2) Summarize new observational constraints including GLODAPv2, SOCAT, SOCCOM, GO-SHIP, community observational synthesis efforts such as Obs4MIPs, ocean carbon inversions, and atmospheric observations of CO<sub>2</sub> and oxygen**

11:10 Nicholas Gruber (Remote - ETHZ) Observational constraints on the global ocean uptake of anthropogenic CO<sub>2</sub>

11:35 Peter Landschützer (MPI) Observation-based estimates of the regional and global ocean carbon sink

12:00 Timothy DeVries (UC Santa Barbara) Ocean Carbon Inverse Modeling

12:25 Break for lunch

1:10 Maciej Telszewski (IOCCP) Community Ocean Carbon Observational Synthesis

1:35 Abhishek Chatterjee (NASA/GSFC) Satellite based Ocean Carbon Observations

1:50 Carolina DuFour (McGill) Air-sea CO<sub>2</sub> fluxes in the Southern Ocean: lessons learned from the comparison between CMIP5 models and SOCCOM data

2:15 Ariane Verdy (SIO) Data assimilation of carbon and other biogeochemical constraints in the Southern Ocean State Estimate

2:40 Coffee Break

3:00 Adrienne Sutton (NOAA/PMEL) Magnitude and timing of ocean carbon uptake variability constrained by seawater pCO<sub>2</sub> time series observations

3:25 Rik Wanninkhof (NOAA/AOML) How (well) do models calculate air-sea fluxes?

3:50 Discussion - Inventory of what new observational and modeling analyses can be done and are planned

4:30 Lightning talks on poster presentations

5:30 - 8:00 Evening Poster Reception with food

**Sunday, December 9**

8:00am Coffee and breakfast

**3) Modeling center reports on model formulation and preliminary analysis of the CMIP6 models in their regional and global patterns in heat/carbon/tracer uptake**

8:30 John Dunne (NOAA/GFDL) GFDL's Contributions to CMIP6

8:50 Matthew Long (NCAR) NCAR's Contributions to CMIP6

9:10 Anastasia Romanou (NASA/GISS) GISS Contributions to CMIP6

9:30 Jim Christian (Fisheries and Oceans Canada) Recent developments in ocean biogeochemistry in the Canadian Earth System Model

9:50 James Orr (IPSL) Progress report from IPSL for CMIP6

10:10 Discussion of CMIP6 models and experiments compared to CMIP5 models and experiments and the timeline for CMIP6/AR6

10:40 Coffee Break

**4) Discuss mechanisms of heat/carbon/tracer uptake differences across models and observations towards linking physical and biogeochemical drivers and their impacts**

11:00 Andrea Fassbender (MBARI) Sensitivity of the ocean carbon sink to natural and anthropogenic carbon cycle interactions

11:25 Laure Resplandy (Princeton) Systematic deficiencies in ocean transport impact land and ocean carbon sinks

11:50 John Krasting (NOAA/GFDL) Resolution-dependent patterns of heat and carbon uptake in GFDL's OMIP and OMIP-BGC simulations

12:15 Discussion and breakout group assignments

12:40 Break for Lunch

1:20 Split into three Breakout groups previously assigned with identical sets of questions for brainstorming

3:20 Coffee Break

3:40 Report back from each of the breakout groups

5:00 Conclusion/writing assignments