Evaluation of CMIP5 and CMIP6 models with the IOMB system: Ocean anthropogenic carbon uptake has a low bias from weak transport to the ocean interior

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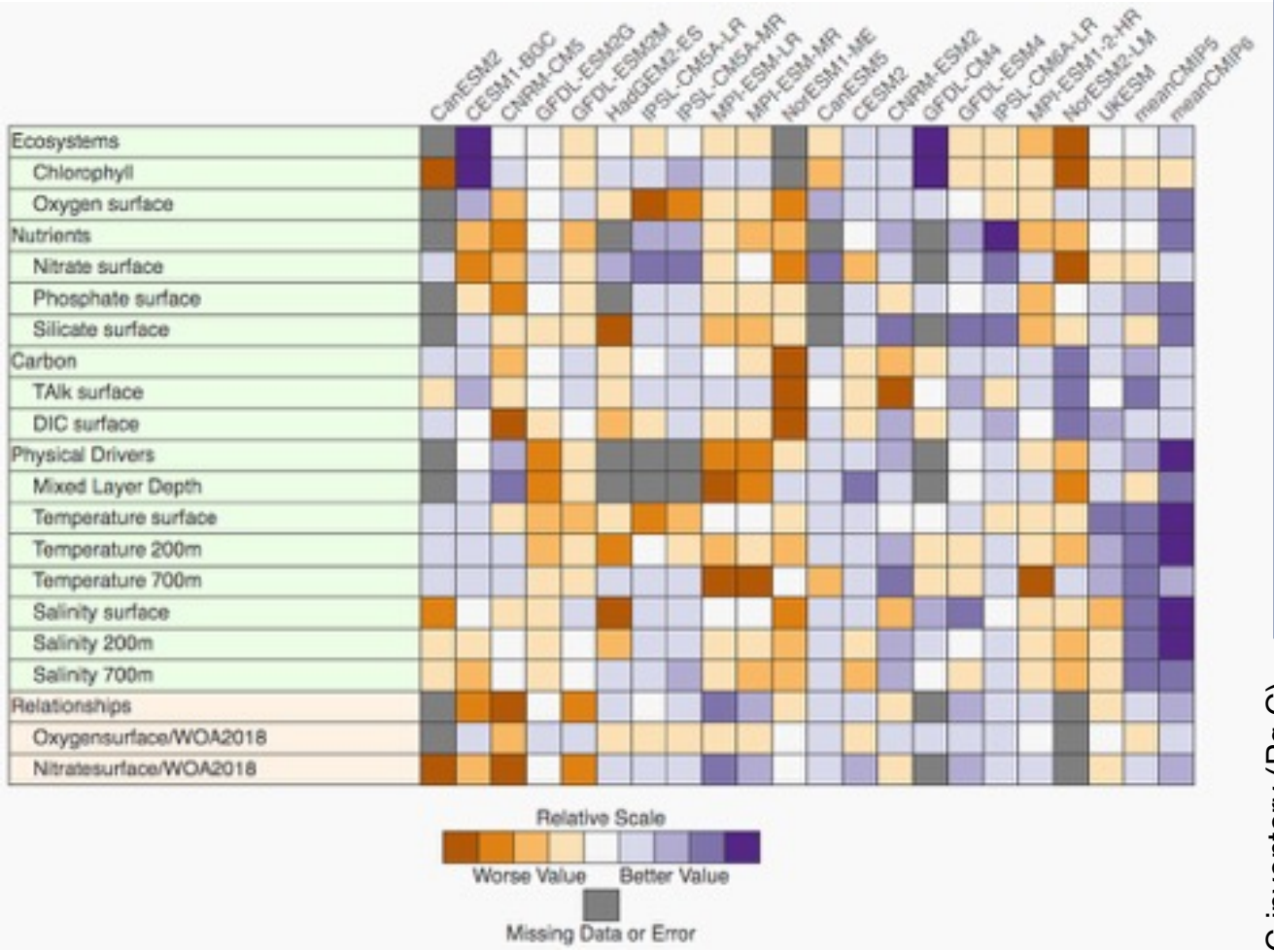
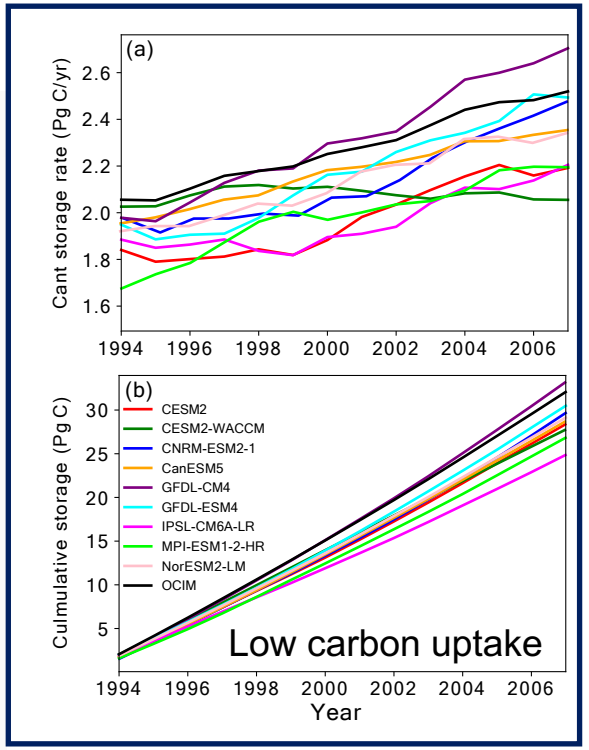
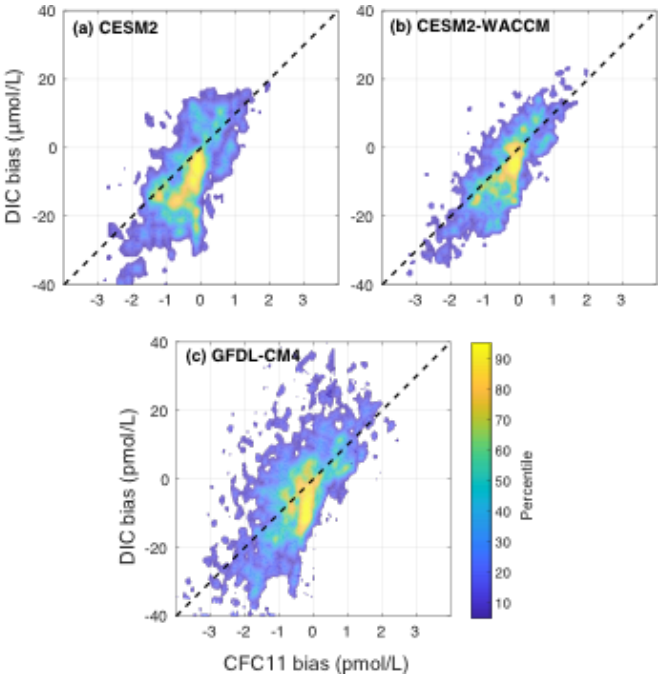
IOMB Summary

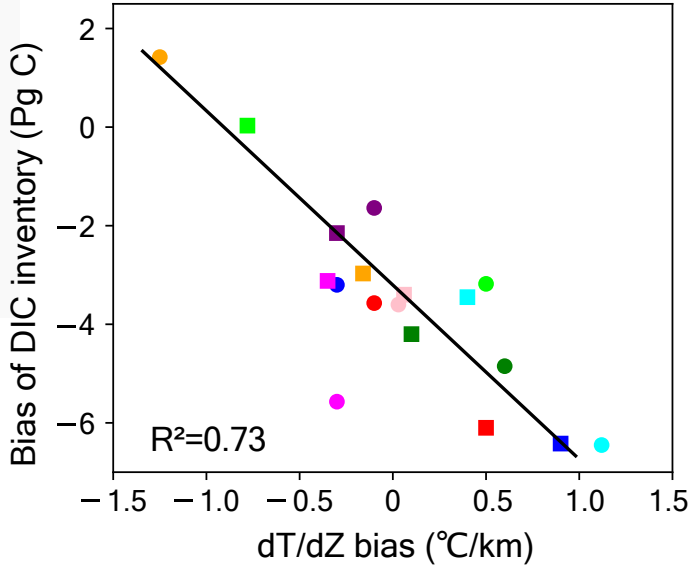


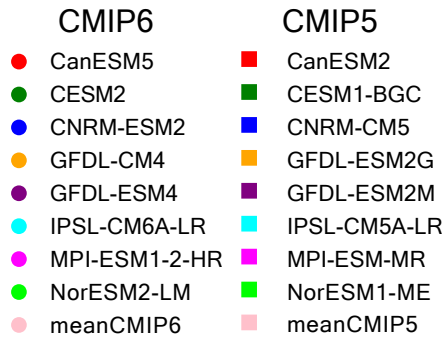
Benchmarking CMIP5/6 ocean models





Weak vertical transport





A linear relationship

Future research and relationship to white paper

- Benchmarking ocean circulation with radiocarbon and chlorofluorocarbons (CFCs)
- Benchmarking the spatial pattern anthropogenic carbon in the ocean and its relationship with ocean circulation tracers.
- Exploring physical and biogeochemical interactions with the focus on how ocean circulation, mixing, stratification, and etc. may affect marine ecosystem.
- Investigating long-term change of oxygen minimum zones (OMZs) with climate warming, drivers and its feedbacks on climate (separating biogeochemical and physical impacts).
  - ✓ Develop and distribute model benchmarking tools with novel metrics…
  - ✓ Perform rigorous evaluation of model performance for MIP activities using the model benchmarking tools …
  - ✓ Investigate the three-dimensional structure of anthropogenic carbon and its relationship with ocean circulation tracers,….