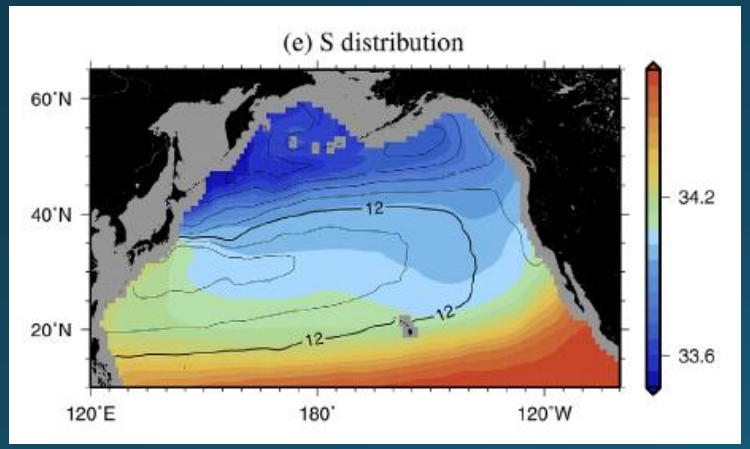
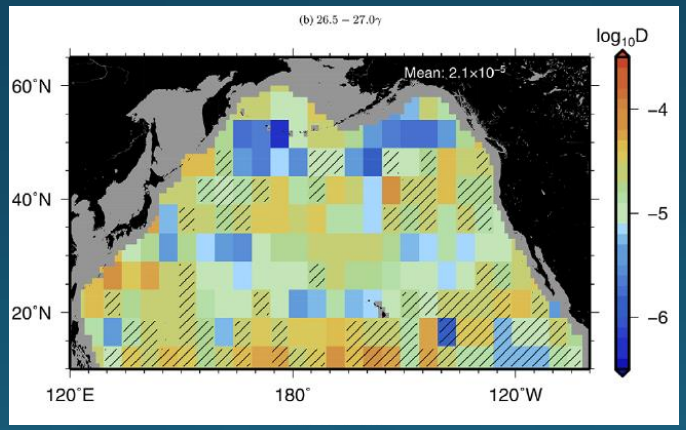
Comparison of salinity distributions on isopycnal surfaces between optimal interpolation and machine learning methods for better evaluation of ocean circulations

Shinya Kouketsu, Satoshi Osafune, Toshimasa Doi, and Nozomi Sugiura

Tracer distributions



Ocean Circulation
(ex. diapycnal diffusivity)



e.g., Kouketsu et al., 2018

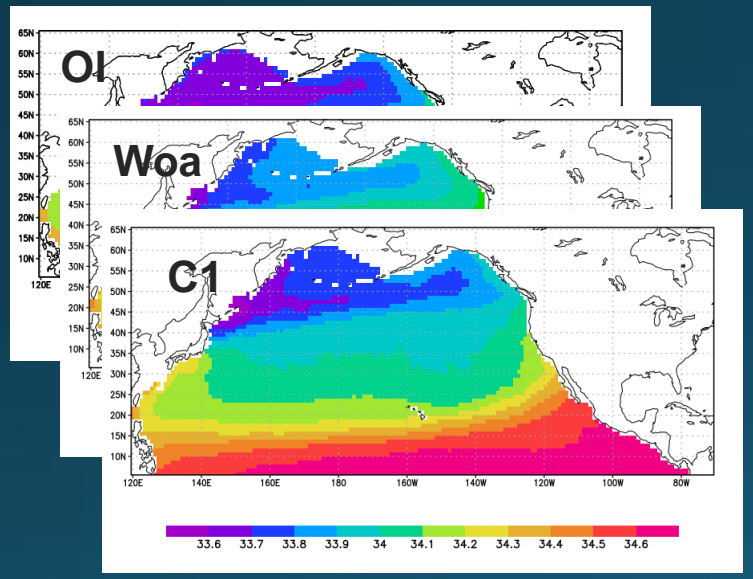
Observation (datasets) impact on the state estimation of ocean circulations is unclear

We cannot evaluate uncertainties & cannot contribute evaluation of observation impact & design

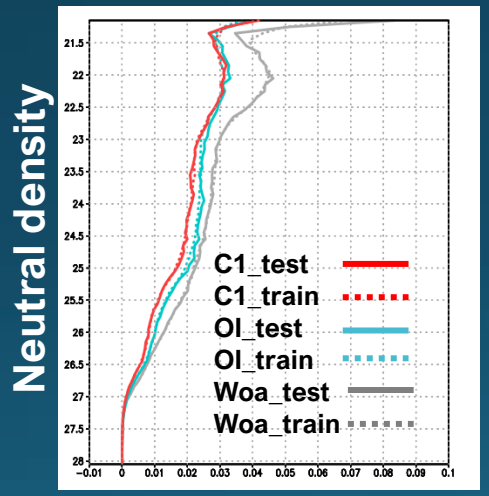
Comparison of salinity distributions on isopycnal surfaces between optimal interpolation and machine learning methods for better evaluation of ocean circulations

Shinya Kouketsu, Satoshi Osafune, Toshimasa Doi, and Nozomi Sugiura

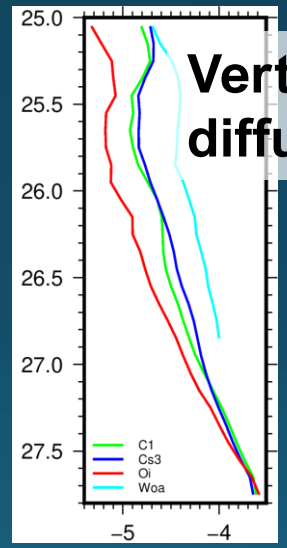
Tracer distributions with multi. methods



Statistical evaluation

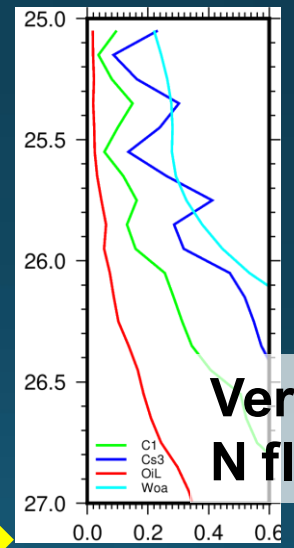


Comparison of ocean circulation



Vertical diffusivity

Comparison of impact on BGC param. budgets



Vertical N flux

Importance of S & N obs. & better dataset

Observation network requirement?

Apart from this adhoc assessment, we conduct obs. evaluation with GCM + Assim. / Please check presentations by N. Sugiura (oral), M. Hattori (oral), Osafune (poster), and T. Doi (poster)