

NEMO assimilation interface working group

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NEMO Developer's Committee meeting

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Aim of the NEMO assimilation interface working group

Maintenance of the infrastructure in NEMO which facilitates data assimilation in NEMO

1. Maintenance of the OBS/ASM interface
(+ Documentation and some python utilities for viewing and assessing assimilation interface output from OBS)

Propose development to NEMO to facilitate developments in ocean data assimilation

1. To aid ensemble DA
E.g. Stochastic physics perturbations for ensemble generation
2. To aid coupled DA
E.g. Possible changes to code to aid JEDI/OOPS interfacing

Successes

Used extensively by MO, ECMWF in real time ocean short and seasonal forecasting

Also starting to be used in climate studies

SETTE test (OBSASM) with the assimilation interface which has proved useful to catch issues

Recent

Updating documentation and bug fixes

Optional detiding of observations? (used for shelf and future global models with tides).

Upcoming

Possible updates/fix for NEMO 4 (particularly from the Met Office when we start using it for ocean forecasting)

Obs oper with new equation of state TEOS 10

Interface for SI3 for sea concentration and sea ice thickness data. Includes IAU to apply increments to SI3

Velocity surface data OO (already in a branch of NEMO3.6)

Namelist control of observation types so it is more generic and easier to add new obs types (e.g. BGC)

(For ensemble DA we are aware of Giovanni through MOI leading an effort to include stochastic physics into NEMO)

Issues

- Unclear picture of who is using the assimilation interface code. OO mostly Met Office, ECMWF. IAU may be used more widely
- Wider take up. We haven't had any meetings for a while so perhaps this is necessary to raise the profile.

More specific issues

- BGC obs operator at the Met Office but there is not a common bio geochemical model framework so can't go back to the trunk
- Don't think obs oper works with AGRIF
- Not sure if obs oper works properly with the Ztilde vertical coordinate