Introduction to discussion on Actions carried this year NDC Dec. 2020

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What has been completed in 2020?

- All actions listed in the 2020 work plan (https://forge.ipsl.jussieu.fr/nemo/wiki/2020WP) are expected to be completed by the end of the year

- A quite large number of them have been successfully completed

- **The list of experts developing NEMO is quite large, but the total represents only an equivalent of 10 experts full time work through the year**

Let's dig into it: the list of new developments included in the future version of NEMO as for 2020 (= from trunk end 2019 to trunk end 2020).

Listed by « STREAMS »:

Successfully developed in 2020 (1)

KERNEL

- Quasi Eulerian Coordinates CO and better e3 management (Sybille & Gurvan)

- New HPG schemes (Amy)

- Runge Kutta, stages 1-3 (Dave, Andrew, Daley, Italo, Gurvan) includes time-pointer changes, DO LOOP macros and RK3 working example (Shallow Water Equations)

AIR SEA INTERACTIONS

- Current feedback (Sébastien)

- Mass-flux convection scheme , still not compatible with TOP & PISCES (Romain)

- Bulk improvements (Laurent)

- ABL1D model & tools improvements (Guillaume)

- Wave forcing improvements (Emanuela)

Successfully developed in 2020 (2)

AGRIF

- AGRIF for CMEMS (Jérôme)
- AGRIF vertical interpolation (Jérôme)

SI3

- EAP rheology - preliminary implementation (Stephanie)
- Melt ponds - preliminary implementation- (Martin)
- VP rheology - preliminary implementation- (Martin)

ENHANCE

- Considering ocean column properties in NEMO-ICB (Pierre)
- OSMOSIS (George, Simon)

TOP

- Ice sheet iron sources (Renaud)

DATA interface
- OBS modifications (Dave)

Successfully developed in 2020 (3)

IOM
- restart read write with XIOS (Mirek)

VALIDATION
- Tests cases now available with most new developments (all)
- SETTE improvements (Pierre and Simon)
- New OASIS test case for ocean atmosphere coupled interface (Claire)

HPC
- Extra Halo extension (Italo, Sébastien)
- Mixed precision - still under way (Oriol)
- Communication cleanup (Italo)
- Loop fusion (Italo)
- Tiling (Daley)
- Use of MPI3 (Silvia)
- Improved computational performance of solar penetration scheme (Andrew)

Aside from development actions, and as for each year:

- Preview and review work

- Documentation (reference manuel, in the code and on the forge and web site)

- Bug fixes: 116 bug fixed between Dec 2019 and Dec 2020

- Answering and closing tickets

- Answering in the NEMO forums

- NEMO Working groups leadership and participation