

Technical ESMValTool Coding Workshop

The Technical ESMValTool Coding Workshop took place via video call from 9-12 March 2020 with 13 participants from U Bremen, NLeSC, BSC, U Reading, PML, MetOffice, SMHI, and DLR. The main goal of the workshop was to discuss a governance draft for the ESMValTool and to advance preparation of the upcoming v2.0 release of the software. Specifically, the workshop included the following topics:

- Governance
- Automatization
- Pull requests for v2.0
- Status and discussion documentation
- Quicklooks and other IS-ENES3 tasks
- Preparation ESMValTool workshop at EGU

Summary of the discussions on the IS-ENES3 tasks

Task 2. Technical Improvements of the ESMValTool (DLR, MetO, BSC, NLeSC, U Read)

Improving the performance of the ESMValTool backend (DLR, BSC, MetO, NLeSC, U Read)

- This task will be fulfilled with the v2 release

Enhance and improve automated testing (BSC, NLeSC)

- NLeSC working on this, involve BSC
- Will come after the v2 release

Containerization (U Read, BSC, NLeSC)

- There is a start
- BSC starts working on this
- After the v2 release

Task 3. Data preprocessing and reformatting (met.no, BSC, DLR, KNMI, UniRes)

- Not discussed because met.no not participating in workshop
- Might be good if BSC could contact them and UniRes to get them more involved.

Task 4. Seamless Evaluation with the ESMValTool (BSC, CMCC, CNRS-IPSL, met.no, SMHI)

Application to Regional Climate Models (SMHI, CMCC, met.no))

- Some diagnostics (e.g. ozone) in v2
- EU-CP project interested in using the tool but mostly for regional model
- We already have the capability to read CORDEX data in ESMValTool and this is already working (SMHI, BSC)

Flexible use across different types of experiments and timescales (BSC, CNRS-IPSL)

- DLR has handed over their decadal prediction system in ESMValTool to BSC
- BSC to take this forward

Task 5. Enhancing the use of the ESMValTool for model development (MetO, BSC, CNRS-IPSL, met.no, SMHI)

Quicklook system for online diagnostics (SMHI, met.no)

- Quicklook system in ESMValTool has been handed over from DLR to SMHI
- BSC and DLR to split the project into “Model monitoring” and “Import capability” (EMAC and other models, also EC-Earth, MetNo, and others); the native output and derived variables should be implemented as fixes
- Diagnostics in the monitoring bit might differ from group to group → we need a system that is flexible
- Maybe take a look at the example from NLeSC (ESMValCore task!), possibly split the task also to consider split into ESMValCore and diagnostics
- BSC drives this project forward with Nor-ESM and EC-Earth
- Then BSC generalize things for other models
- DLR and BSC (and probably other institutes such as MetO) really keen to test a generalized version

Incorporation of ESMValTool into modelling or stand-alone workflow (MetO, CNRS-IPSL, met.no, BSC, SMHI)

- Related to AutoAssess

Task 6. Coupling of externally developed diagnostics and metrics to the ESMValTool (DLR, BSC)

- Not discussed, but quite a bit of work ongoing including MetOffice AutoAssess, NCAR Climate Variability Diagnostics Package (CVDP), Mid-Latitude Evaluation System (MiLES)
- See also Eyring et al. (2020), Geosci. Model Dev.

Task 7. Coupling of ESMValTool to the ESGF (U Read, DKRZ, DLR)

- Nearly done (DLR, DKRZ)

Task 8: Distributed ESMValTool computing and calculations on user demand (NLeSC, BSC, DLR, CNRS-IPSL)

- Not discussed, but not high priority at this stage

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