Schweizerische Eidgenossenschaft
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Swiss Confederation

Federal Department of Home Affairs FDHA
Federal Office of Meteorology and Climatology MeteoSwiss

Priority Task : Evaluation of the Dynamical Core Parallel Phase (EDP2)

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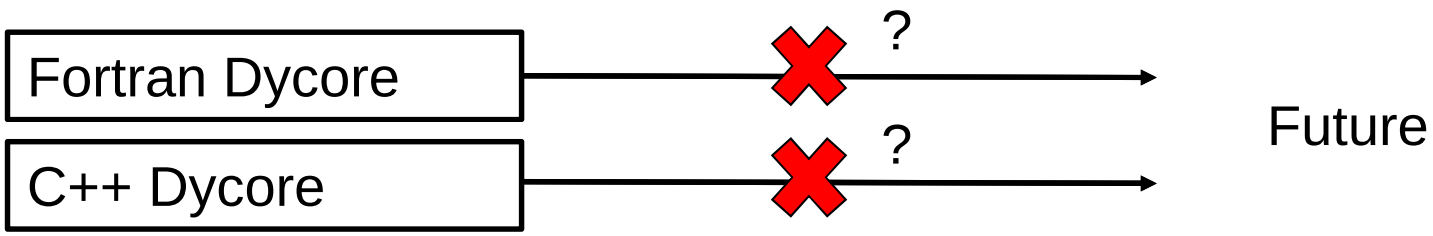
Aim

- Evaluate the Fortran/C++ - Stella dycore parallel phase
- Provide recommendations to the STC, in form of a report
- Specifically, whether the parallel phase should be extended at the end of the defined period or whether either the Fortran or C++ dynamical core should be discontinued.



Task 1: Impact / Cost of the parallel phase

- Evaluate the cost of synchronising (in terms of FTE)
- Evaluate the impact (on users) of having the two dynamical cores

Task 2: Evaluation of the C++/STELLA Dycore

- Evaluate performance
- Consequences / experience of using the C++ dynamics for operational weather prediction
- Experience with developing using the C++ dynamic core, summary and review of contributions 03.2017
- Impact on support and installation of the COSMO
- Mid- and Long-term development and maintenance plan for DSL library STELLA resp. GridTools

Task 3: Impact of discontinuing the Fortran or C++ dynamical core

- Impact of discontinuing the Fortran based dynamical core
  - Workflow for the dynamics development
  - **Evaluate the proposed development workflow (on a concrete development example, e.g. new advection scheme)**
  - Evaluate training effort for the main dynamics developers considering the selected workflow
  - Consequences for the COSMO members
  - Consequences for collaborations with universities

- Impact of discontinuing the C++/STELLA based dynamical core
  - Workflow for the dynamics development
  - Consequences for the COSMO members
  - Consequences for collaborations with universities

- **Task 4: Final recommendation to STC**

  - Summarize conclusion of the different subtasks and provide recommendation for the STC