

*Regional Cooperation for
Limited Area Modelling in Central Europe*



Reporting on ACCORD Physics activities in R&D

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Overview

- there is an ACCORD rolling work plan
 - edited by WP editors and manpower contributions by LTMs
- there is and ACCORD MG
 - members are among the editors and supervises RWP writing
- manpower reporting by LTMs, reviewed by MG
- scientific results reporting
 - newsletter, presentations, posters, scientific publications
 - working weeks, workshops, scientific conferences, (semi)regular WG or WP meetings
 - reports for research stays
 - **area level scientific report**

ACCORD Area level scientific report

RC LACE area reports done regularly and are available at
<https://www.rclace.eu/lace-projects/physics>

ACCORD reporting would not be much different in form

- but, it would be a rolling report, continuously updated
- Google doc, organized as the subjects in the RWP
- Some rules: font colours for task description, report text, max one page per task, figures can be included but not mandatory, short with references to longer report
 - people working on a task to be named
 - Manpower deduced from manpower reporting tool
- Details (TBD, agreed upon) and can depend on the area:
 - who can edit/suggest/comment/see the report

ACCORD Physics area is specific – no area leader but a WG and 3 CSCs



Example (work for 2021)

PH3 Developments of ALARO physics

PH3.1 Radiation scheme – minor improvements, single precision

Technical development work to allow for externalisation of aerosol optical properties from acraneb2.

The aerosol optical properties from ACRANEB2 were externalised. The ACRANEB2 input, given as layer optical depths at 550nm for 6 basic aerosol types, was replaced by the broadband extinction coefficient, single scattering albedo and asymmetry factor of the resulting aerosol mixture. These aerosol inherent optical properties can be diagnosed from more realistic real time CAMS (Copernicus Atmosphere Monitoring Service) aerosol mass mixing ratios, entering as GFL fields from initial/coupling files. For ascending compatibility, subroutine converting old aerosol loads to their inherent optical properties has to be created first.

To improve the forecast during a wildfire, desert dust intrusion, volcanic eruption and enhanced anthropogenic emission situations, the information about aerosol concentrations from climatological files is not sufficient. For this reason, the new code updates are going towards the implementation of the near real-time aerosol concentrations from the CAMS model to the radiation schemes.

A new external tool for computation of spectral weights and masks and to take part in the preparation of the conversion subroutine from CAMS aerosol mass mixing ratios (MMPs) to aerosol optical properties. The new module VOMAFPO, the new

This is a printscreen of an example I made for illustration as a google doc, there is no complete report available yet! Input taken from LACE physics report.

Example (work for 2021)

PH6 Study the cloud/aerosol/radiation (CAR) interactions

The progress on the PH6 work is well traced on regular online meetings that are reported on <https://hirlam.org/trac/wiki/RWP21-PH6>
Laura 8pm, Daniel 4pm, Ana 2pm, Piotr 1.5pm, Jan 1.5pm, Mohamed 1.25pm, Abdenour 0.75pm, Ulf 0.5pm, emily 0.5pm, Vincent 0.25pm

PH6.1 1. GFL dataflow for the set of CAMS aerosol MMRs from init/coupling files to the level of MF_PHYS. 2. Updated dataflow for the set of climatological aerosol MMRs from the monthly climate files to the level of MF_PHYS.

The input conversion routines were written that work with gl.
aerosol MMR fields from CAMS are extracted and accommodated in the lateral boundary files using gl software that is available for the whole consortium. From the initial/coupling files the n.r.t. MMRs are read as standard GFL fields. This will enable their advection and lateral coupling, as well as easy propagation across the model code, and possibly also into the output files. n.r.t. aerosol MMRs are passed to the level of MF_PHYS, where they are passed to APL_AROME and APLPAR for further processing for radiation and cloud microphysics.

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Proposal

- single document for the whole calendar year
- Google doc link on ACCORD Wiki is open for reading to
 - a) everyone with the link
 - b) everyone listed in physics work packages
 - c) per request

Options for editing (depends on previous, need to agree with phy WG):

- a) everyone can comment
- b) WP editors can edit or comment
- c) PH WG can edit according to comments

ACCORD Phy WG did not discuss the organisation of the ACCORD reporting in detail yet!

Very similar to what we already do in LACE.

- reorganizing reporting

