

ACCORD

A Consortium for COnvection-scale modelling
Research and Development

Area Leaders and Documentation Officer Introductory Session

All Staff Workshop 2026

Code Evolution Area Leaders

Following phase 1 GPUs activity with a more general view on code modernization :

- **Code Porting to Hybrid Architectures (GPUs)**

A significant portion of the porting effort has already been completed; however, several challenges remain. Ongoing work includes continued development of ECRAD and ectrans, further progress on AROME physics, adaptation to emerging hardware architectures, and the refactoring of SURFEX.

- **Adoption of New Coding Practices**

A key objective is to reduce technical debt that currently limits further development, in alignment with ECMWF's roadmap. This involves adopting modern coding approaches, including the use of Domain-Specific Languages such as GT4Py (already utilized in the PMAP code), leveraging Atlas to support grid-point computations, and increasing the use of Python to improve flexibility and productivity.

Data Assimilation Area Leader

R&D teams with co-chairs:

- **In situ observations:** Helga Toth, Kasper Hintz
- **Ground-based remote sensing:** Jana Sanchez Arriola
- **Satellite observations:** Stephanie Guedj, Isabel Monteiro, Olivier Audouin
- **Preprocessing:** Alena Trojakova, Mate Mile
- **Variational algorithms:** Antonin Bučánek, Valérie Vogt, Pau Escribà
- **Ensemble-variational DA:** Pierre Brousseau, Benjamin Ménétrier
- **Initialization and nowcasting:** Florian Meier, Maria Diez
- **Diagnostic methods in DA:** Eoin Wheelan, Idir Dehmous
- **AI methods for DA:** Jelena Bojarova

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Slovenia

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DAsKIT implementation support : Maria Monteiro

Working weeks:

- 2-3 general WWs (with few R&D topics each time)
- smaller specific WWs
 - WW on algorithms and satellite DA, FMI, Helsinki, March 2026
 - Obsmon WW, SHMI, Norrkoping, March 2026



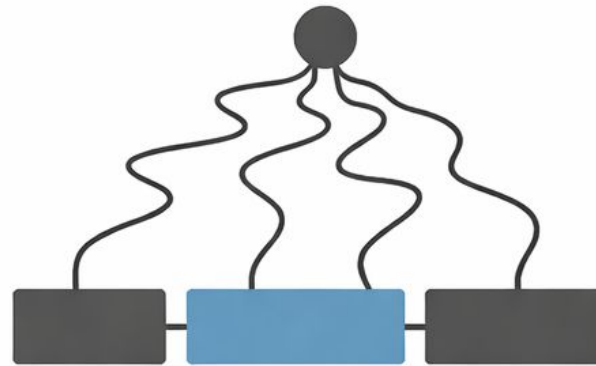
Data Assimilation Area Leader

Proposed priority topics in DA area



Uptake and exploitation of current and upcoming EUMETSAT missions

(all-sky, all-surface)

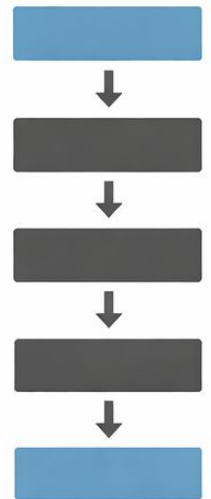


Algorithms: All R&D migrated to OOPS

(3d/4DVar, 3D/4DEnVar)

Implementation of DA functionalities in common scripting

reproducibility, onboarding of colleagues, reference



Dynamics Area Leader

Area mission

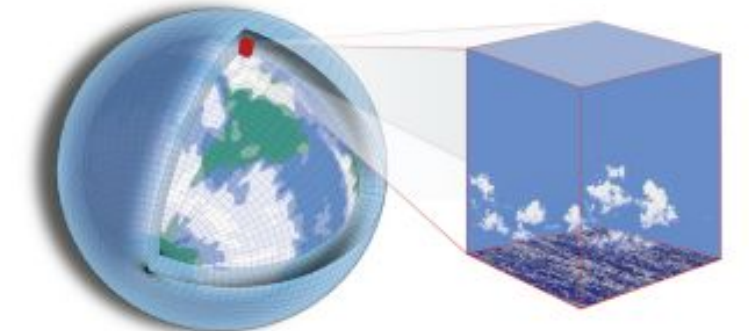
Develop and improve the performance of the dynamical core employed in the ACCORD CSCs

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Phase 2 Strategy Overall Goal

Achieving higher resolution
while maintaining stability



2026 Effort

12 contributors across 7 NHMSs ~ 3.5 FTE

Dynamics Area Leader - priorities

1. Improving the spectral semi-implicit semi-Lagrangian dynamical core

- Developing options for stability and high-resolution
- Making configurations uniform across CSCs - DE_330 synergy
- Code cleanup
- Documentation

2. Investigating the new finite-volume dynamical core PMAP (former FVM)

- Deploying PMAP-LAM on real-weather cases, compare w/ CSCs - DE_330 synergy
- Formulate roadmap for LAM physics coupling into PMAP - cross-ACCORD

3. Strengthening efforts/collaboration in Area - get in touch if interested!

EPS Area Leader

Goals and Priorities

Add all necessary EPS components in the new scripting
Today we have general EPS capability in and for
uncertainty we have bnd and SPP

Work closer together cross-CSC in developing
uncertainty components

Enhance SPP

continue to develop for upper air, incl for new
physics parameteisations and higher resolution,
flow dependence

Extend further to surface and dynamics

Cooperate with all areas - in EPS we touch everything!
Build AI capabilities in the team

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Norway
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Means

New scripting a new opportunity for us

Continue with our yearly ACCORD working week - next
this autumn in Copenhagen

Utilise DAP visits

Set up cross-CSC EPS teams - Tactus makes that a
natural step

Try to get more cross-CSC tasks in the rolling
work plan in the coming years

Surface Area Leader

Physiography

- Continue efforts towards higher-quality physiographic fields, including ECOSG-ML at 60 m resolution.

Physics

- Continue efforts towards multi-patches and multi-layer surface physics.

Data assimilation

- Make efforts to find a more common road forward.

Code and validation

- Aim for SURFEXv9 coupled to IAL
- Further develop and widen the use of OSVAS: Offline SURFEX Validation System

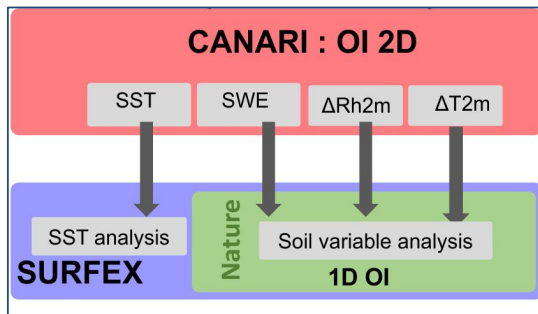


Patrick Samuelsson SMHI,
Sweden

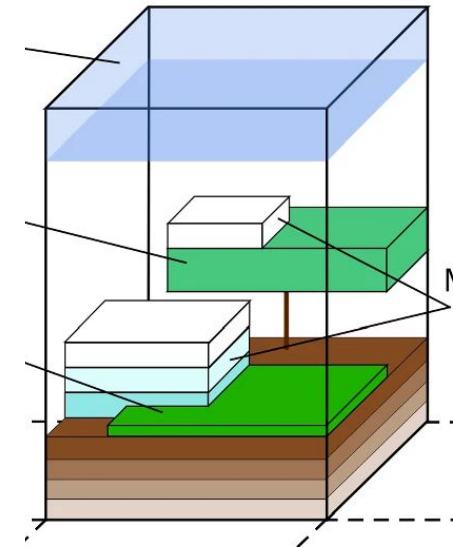
patrick.samuelsson@smhi.se

Surface Area Leader

Proposed priority topics in the surface area



OSVAS



Give development priority to an OI surface data assimilation component in Tactus

Give OSVAS development secure resources

Support investigations of how tile/patch diagnostics should be optimized in surface DA and for downstream use

System Area Leader

Top priorities for system

- Introduce a common scripting in ACCORD
- Improve procedures and infrastructure for co-development and cooperation
- Build a stronger team around system aspects and work closer together



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How to contribute?

Working through the COM/SY WP's. So far with regular SY4 meetings. Welcome to join!