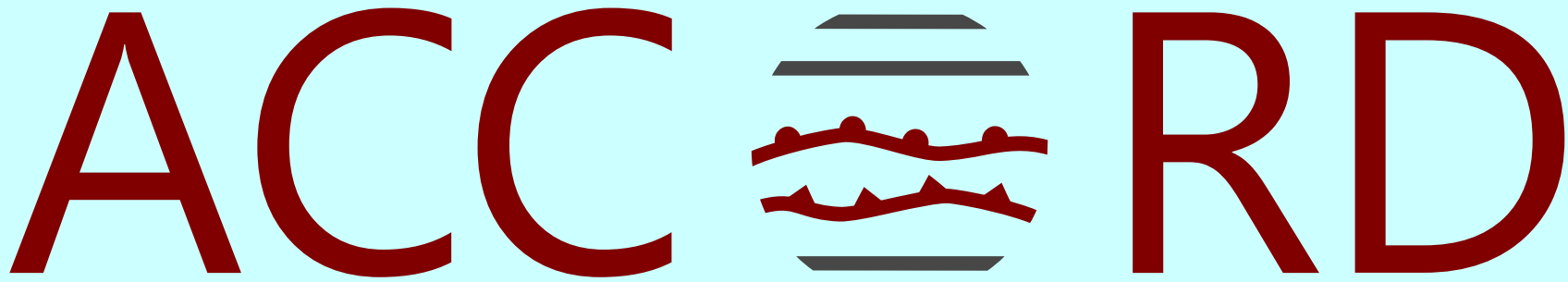


# ACCORD

The logo for ACCORD features the letters 'A', 'C', 'C', and 'R', 'D' in a dark red, sans-serif font. The letter 'O' is replaced by a stylized icon representing a cross-section of a cloud or a convective cell. This icon consists of a grey top layer, a red middle layer with a wavy, undulating boundary, and a grey bottom layer.

A Consortium for COnvection-scale modelling  
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**An overview of current thematic WG in ACCORD**

Claude FISCHER, ASW2022, 4-8 April 2022, Ljubljana & online

# There are 3 active thematic WGs

- **WG-ML: use of ML tools in NWP modeling**
  - Use ML tools for speeding up computations in certain parts of the codes
  - Use these tools for complementing the modeling of specific processes
- **WG-VHR: discuss challenges on hectometric scale (ACCORD) modeling**
  - Incentive triggered by more and more pressing user needs
  - Link with the DestinE project (if accepted – on-demand VHR EE Digital Twin)
- **WG-PHY: address interoperability across the 3 CSC physics**
  - Goal listed in the ACCORD strategy
- **PH5 (model output) work package from RWP**

# WG-ML (Machine Learning for NWP codes)

- **Purpose:**

- Propose a portfolio describing suggested studies on using ML tools for NWP, that ACCORD teams could consider if they want to engage in this field
- Post-processing applications are not in the scope, otherwise any of the thematics from the ACCORD NWP scope & codes are

- **Who: about 15 participants, proposed by MG (a few participants joined later)**

- **What have we reached so far?**

- One meeting with ML experts, in the context of EWGLAM2021
- The WG has addressed a variety of NWP topics: physics (turbulence, radiation), surface (physiography), data assimilation, probabilistic forecasting
- A draft portfolio structure has been agreed on, with a list of topics, and will be collaboratively edited

- **Wiki: announcements of seminars, references, minutes of WG-ML meetings and slides on material prepared by WG-ML participants, all available at [https://opensource.umr-cnrm.fr/projects/accord/wiki/Machine\\_Learning\\_\(ML\)](https://opensource.umr-cnrm.fr/projects/accord/wiki/Machine_Learning_(ML))**

# WG-VHR (hectometric scale modeling)

- **Purpose:** discuss relevant configurations based on our current knowledge, describe challenges for R&D (numerical stability – processes – cost v/s realism), validation strategies (tools, obs), predictability and its impact
- **Who:** about 15 participants, proposed by MG (and a few more joined later)
- **What have we done so far ?**
  - Recommended namelist options for dynamics have been drafted, and reminder on the analysis note prepared by Petra Smolikova (2016)
  - Drafted challenges regarding turbulence and radiation, 3D effects in physics (refer to side meeting)
  - List of existing VHR configurations in ACCORD countries, with details on namelist options and other meta-data. List of user needs.
  - Started to address validation of VHR models: which tools, which observations (lead by Carl Fortelius)
- **Wiki: minutes of meetings and material available at**  
[https://opensource.umr-cnrm.fr/projects/accord/wiki/Very\\_High\\_Resolution\\_Modeling\\_\(VHR-MOD\)](https://opensource.umr-cnrm.fr/projects/accord/wiki/Very_High_Resolution_Modeling_(VHR-MOD))

# WG on physics interoperability

- Physics AL position (no candidate) => then how to trigger a proposal on how to increase interoperability ?
- PM proposed a Working Group, adopted by the Assembly on its 8 March 2021 meeting:
  - Composition: PM, 3 CSC Leaders, P. Termonia, D. Degrauwe, S. Malardel
  - Time line and delivery: propose a roadmap for end 2022, beginning of 2023 latest

# WG on physics interoperability

- Updated work package PH9 in RWP2022
- SURFEX aspects let to Surface Area and CSC teams
- **Discussed way forward regarding the physics codes. Current status is:**
  - There exist some complex pieces of code, that would greatly benefit from simplification and re-factoring.
  - The WG thinks along the lines of splitting such routines, while defining data structures and interfaces consistently throughout CSCs
  - These ideas are largely in-line with the required re-factoring of the physics interfaces for the code adaptation to new HPC architectures (SPTR and DestinE needs)
- **Drafting of a roadmap: not yet started, a strong link with SPTR seems mandatory**

# A brief from the RWP PH5 work package

- Lead by PM + CSC-Leaders + CNA
- Questionnaire sent out to LTMs (about 16 teams answered)
- Their answers have been grouped into four thematic fields, that are rather “new” and could pave the way for more exchange of information and collaboration:
  - Visibility, low clouds & fog
  - Convection-related (helicity, hail, lightning)
  - Precipitation types and their impact on surface conditions
  - VHR turbulence-related (wind shear, gusts, EDR etc.)
- **Next step: we intend to plan dedicated information and planning meetings per thematic field, during spring-summer (online)**
- **The thematic grouping above is likely to prefigure the shape of the PH5 work package in the next ACCORD RWP2023**

# ACCORD

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**Hvala za vašo pozornost**

C. Fischer