PARTNER PRESENTATIONS

KO meeting
All partners introducing in turn

1. ECMWF introduction

- **Who**?

  - P. de Rosnay, T. Warnaars, R. Phipps, P. Weston, T. Stockdale, H. Hersbach, A. Brookshaw, F. Vitart, E. Pinnington, J. Day, G. Balsamo, M. Choulga, R. Senan, M. Alonso-Balmaseda (across Teams, Sections, and Departments) + New Name/Recruit

- **What**?

  - Project Coordination, WP Leads (WP2, WP4, WP6, WP8) and co-Lead (WP1, WP3, WP5), IFS developments for reanalysis and seasonal prediction

- **Why**?

  - Prepare for the next generation of C3S reanalysis and seasonal prediction systems.

- **How**?

  - Tools: IFS land DA and coupled land-atmosphere DA, ECMWF reanalysis and seasonal prediction systems, ECMWF diagnostic tools

- **When**?

  - January 2023 – December 2026 (month1-48)

2. MET Norway

➤ Work on regional NWP systems - HARMONIE-AROME, in cooperation with ACCORD/HIRLAM partners
➤ Presently responsible for the Arctic regional reanalysis (CARRA) in C3S, was partner in the European regional reanalysis (CERRA).

Main contributions:

● In WP1: Land surface data assimilation developments in HARMONIE-AROME
● In WP2: Coupled land-atmosphere development in HARMONIE-AROME

WP1 + WP2 staff:

Jostein Blyverket, Åsmund Bakketun, Stephanie Guedj, Roel Stappers, Benjamin Ménétrier

● In WP4: Set up and run regional reanalysis demonstrators

WP4 staff:

Harald Schyberg (WP co-lead), Eivind Støylen, Jostein Blyverket

Partner 3. Introduction :

SMHI

Swedish Meteorological and Hydrological Institute,
Folkborgsgatan 17,
Norrköping, Sweden

Contributors

(local project coordinator)
Jelena Bojarova
(administrative contact point)
Monica Walgren
(meteorology-hydrology-remote sensing research team)
David Gustafsson
Jude Muzuuza
Tomas Landelius
Ronald Scheirer
Magnus Lindskog
NN (New Name New Recruit)
(a post-doc position)

Months 1–48
(approximately 100 person months in total)

Main Activities

1. Development of consistent ensemble based land surface and soil data assimilation scheme;
2. Development of coupled land atmosphere data assimilation scheme
3. Enhanced use of remote sensing observations, in particular from passive MV radiances
4. Design of the prototype of future Copernicus Arctic and European Reanalysis

Synergies with

CARRA NG, CAISA, ACCORD

4. MF overall contribution to CERISE

- **Who**?
  - J.-C. Calvet, C. Ardilouze, B. Bonan, P. Le Moigne, D. Specq (3 CNRM teams)
- **What**?
  - WP3 (LDAS-Monde), WP4 (European reanalysis), WP5 (seasonal forecast demo), WP6 (Evaluation)
- **Why**?
  - General need to improve land reanalyses and initial conditions for climate applications
- **How**?
  - MF tools: ISBA-CTRIP and LDAS-Monde within SURFEX, CNRM-CM6-1
- **When**?
  - Milestones 5-13 and Milestone 19, from month 9 to month 48

5. DWD   DWD's contribution

WP	WP3 (75%)	WP5 (21%)	WP7 (2%)	WP8 (1%)
Tasks	• Adapt soil moisture and snow analysis and test different methods • Develop leaf area index assimilation • Initial conditions for ICON-seamless seasonal hindcasts	• ICON-seamless hindcast production • Evaluation of hindcast data • data checks and data transfer for ICON-seamless	Provide the SMOPS NOAA multi-sensors data to the CERISE observational archive	Support the managament and coordination team
Who	NN, Nils Noll, Gernot Geppert	Nils Noll, Kristina Fröhlich	NN, Gernot Geppert	Kristina Fröhlich, Nils Noll
When	M1-M40	M1-M42	M10-M12	M1-M42

6. CMCC in CERISE

Objectives: improve the initialization of the CMCC seasonal forecasting system (C3S) by improving the CMCC tools for atmosphere and land-surface analyses (weakly coupled data assimilation).

Activities:
- Involvement in four work–packages: **WP3, WP5, WP6 and WP7** (coordinator)
  - Development of a weakly coupled atmosphere – land-surface data assimilation system (WP3).
  - Production of seasonal forecast demonstrators and sensitivity experiments (WP5)
  - Assessment of the errors in land–surface parameters (e.g., soil moisture, LAI and snow, and associated physical processes) and their impacts on the forecasts (WP6).
  - Creation of an observational (products) archive to initiate and validate analyses and forecasts (WP7).

People: Silvio Gualdi (CMCC PI, WP3, WP5, WP6), Carla Cardinali (WP7 leader, WP3, WP5, WP6), Marianna Benassi (WP5, WP6), Giovanni Conti (WP3, WP5, WP6), Luis-Gustavo Gonçalves (WP3, WP6), Daniele Peano (WP3, WP5, WP6), Antonella Sanna (WP5, WP6), Malick Swapan (WP3, WP6), Monia Santini (WP7), Dario Papale (WP7), Elonora Canfora (WP7), Carlo Trotta (WP7)

7. BSC contributions to CERISE

WP5: Coordinate the set-up of an experimental protocol and perform a general common evaluation of the seasonal forecast demonstrators.

WP6: evaluate soil moisture variability, land-atmosphere processes driving heatwaves and droughts, 'windows of opportunity'

WP7: Provide time-varying land cover and LAI maps for reanalysis prototypes

<u>BSC team:</u>
Nuria Perez-Zanon
Nube González-Reviriego
Victòria Agudetse
Nadia Milders
Lluís Palma
Etienne Tourigny
Markus Donat
Postdoc WP6
Postdoc WP7

8. Danish Meteorological Institute

Contributing Staffs

Fabrizio Baordo, Carlos Peralta, Kasper Hintz, **Xiaohua Yang**

Committed DMI activities

WP4: Regional reanalysis demonstrators

1) Proto-type offline Arctic land assimilation based on CARRA1
2) Proto-type, new offline Arctic land assimilation
3) LAM reanalysis demonstrator with outcome from CERISE development

WP6: Validation about LAM output

Focus: validation of reanalyses over permafrost regions/Ice sheet

1) Evaluation/validation of LAM reanalysis demonstrators in WP4
2) Added values of Pan-arctic CARRA LDAS on top of the CARRA 1.0
3) Contribution to collection of shared validation dataset/intercomparisons.

9. ESTELLUS

Startup located in Paris :

- Focussing on remote sensing (continents, atmosphere, ocean)

- Strong expertise on Machine Learning / Artificial intelligence. Willing to help other workpackages on this.

People involved :

- Filipe Aires

- Carlos Jimenez

- Lise Kilik

- Victor Pellet

- Catherine Prigent

WP 1.4:

- Develop a novel observation operator enabling improved us of observations over land, snow and sea-ice
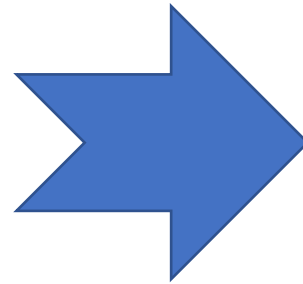
- Some activity soil moisture remote sensing

10. IPMA (Portugal)

Our Team:

- ✓ Isabel Trigo
- ✓ Emanuel Dutra
- ✓ Sofia Ermida
- ✓ João Paulo Martins
- ✓ Juliana Freire

     (members of IPMA's Earth Observation Unit)

WP 6 (14 pm)

WP 7 (5pm)

Our Role:

➢ Explore satellite LST (& other satellite products) to assess the representation of model's land surface processes

➢ Co-lead WP7 & Provide/Prepare Satellite datasets: LST and Albedo

NILU - Norwegian Institute for Air Research (partner #11)

Personnel involved: Yvan J. Orsolini, Senior Scientist

Postdoc/Junior Scientist: tbd (from fall 2023)

WP 6 (*22PMs*), **7** (*0,5 PM*)

Focus on snow variables

Snow initialisation and role of snow in seasonal forecasts

snow observations (High Mountain Asia)

Partner 12 Introductions: ⪡ Met Office

Met Office
Exeter

United Kingdom

Partner Lead:

Jeff Knight

Contributors:

David Fereday

Martin Andrews

Adam Scaife

Jamie Kettleborough

Tammy Collier

Main Activities

- LS initialisation methods for the GloSea6 seasonal prediction system (WP3)

- Production of seasonal hindcast demonstrators using LS reanalysis prototypes (WP5)

- New analysis methods to gauge improvements from improved LS initialisation (WP6)

- Assessment of seasonal demonstrators (WP6)

- Production of final recommendations (WP6)

Workpackage Contributions (PMs)

1	2	3	4	5	6	7	8
		18		6	24		1

Funding

- Met Office is pleased to be contributing to CERISE as an *Associated Partner*

- We will receive funding direct from the UK government

- Our working interactions with the consortium will be as usual for EU projects

Thank you

ECMWF, MetNorway, SMHI, Météo-France, DWD, CMCC, BSC, MetOffice, DMI, ESTELLUS, IPMA, NILU