

# Capacity building and training activities at ECMWF

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Engagement and Partnerships Section



# ECMWF – Who are we?



## Intergovernmental Organisation Established in 1975

- 23 Member States
- 12 Cooperating States
- 550+ staff



## 24/7 operational service

- Operational NWP – 4 x ENS forecasts / day
- Supporting National Weather Services, Research Institutes & Businesses globally



## Research institution

- Experiments to continuously improve our models
- Reforecasts and Climate Reanalysis

## Operate Two EU Copernicus Services

- Climate Change Service (C3S)
- Atmosphere Monitoring Service (CAMS)
- Support Copernicus Emergency Management Service (CEMS)



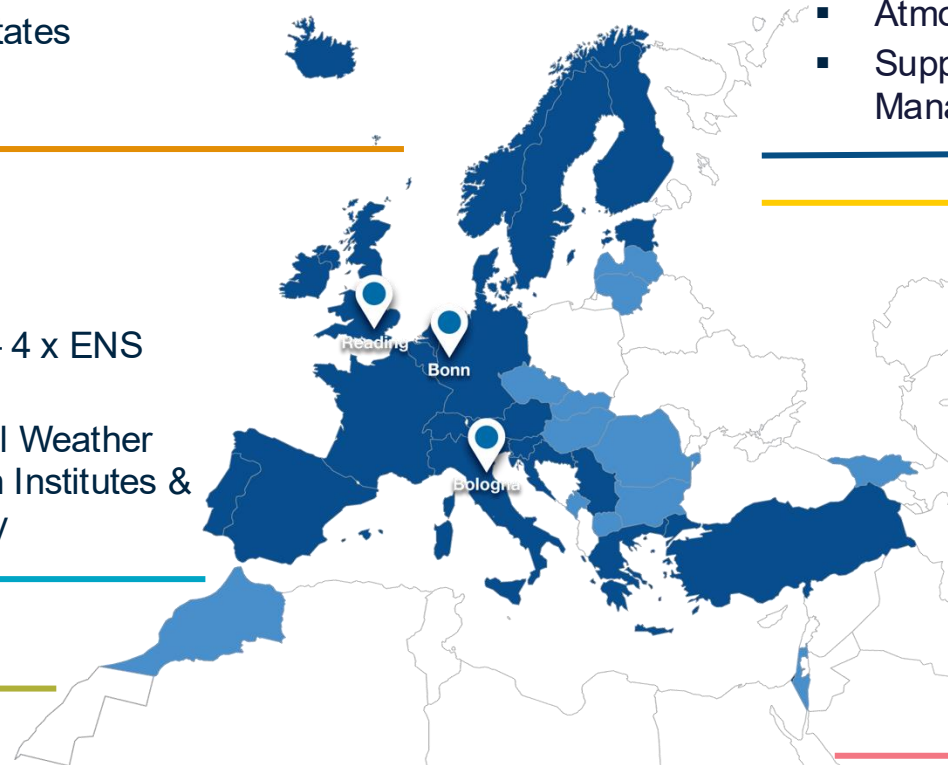
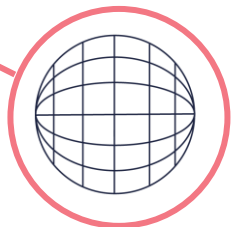
## Strengthening Early Warning in Africa (SEWA)

- Improved access, processing, applicability and use of data and services for Early Warning
- Enable co-design & delivery of Impact-Based Forecast services & tools
- Strengthened human capacities, knowledge and community shaping

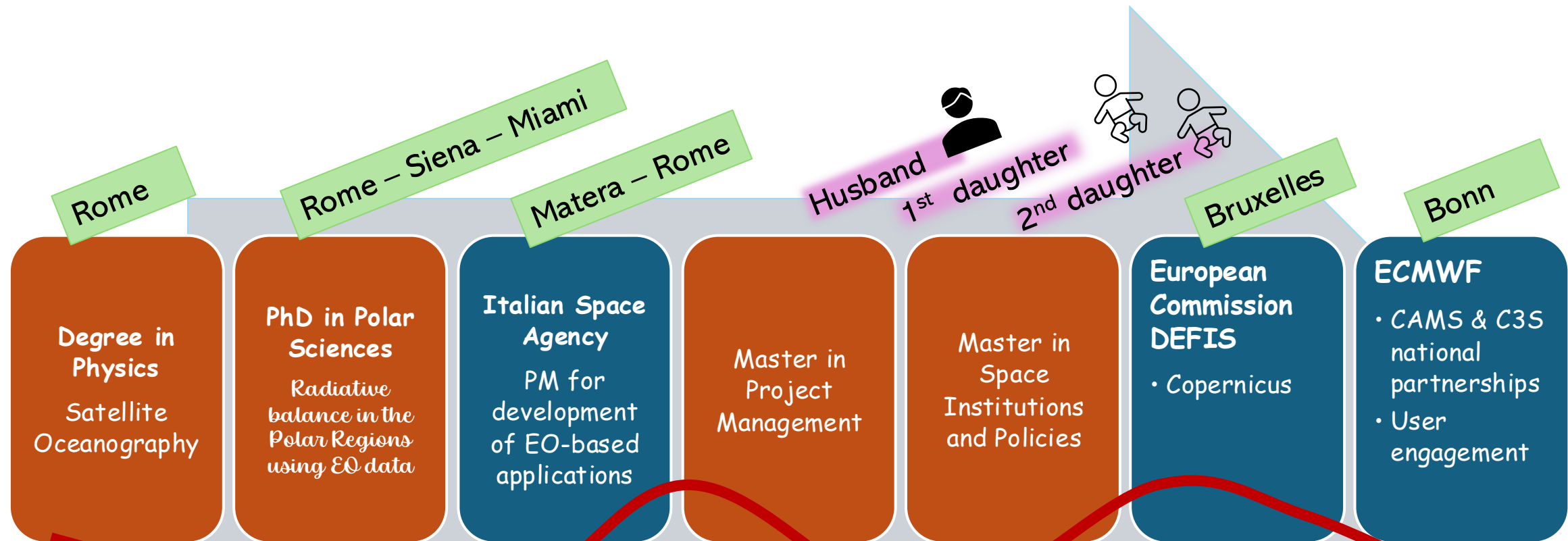


## Destination Earth

- Operates the DestinE Digital Twin Engine (DTE)
- Operates two Digital Twins



# Cristina – Who am I?



Earth Observation: WHAT WHO WHY



# Training courses in:

ECMWF

Home About Forecasts Computing Research Learning Publications

Training Workshops Seminars

Events Resources

**In person or online, learn with your peers**  
Take part in our classroom-based, online, or hybrid sessions designed to support learning through direct or virtual interaction with trainers and peers. These formats offer structured instruction and opportunities to explore concepts in depth — ideal for those who value real-time engagement and collaborative learning. [Show all training events >](#)

Guidelines for training course applications  
Training course fees  
Training course payment  
WMO fellowship scheme  
C3S training

UPCOMING  
ECMWF

UPCOMING  
ECMWF

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ECMWF

Training course:  
EUMETSAT/ECMWF NWP-SAF satellite data assimilation  
23 March, 2026 - 27 March, 2026 | ECMWF  
5-day course is sponsored by EUMETSAT and is open to anybody with a suitable background. This course provides a...

PROGRAMME OF THE EUROPEAN UNION  
Copernicus  
ECMWF  
EUMETSAT  
esa

**JOINT TRAINING IN ATMOSPHERIC COMPOSITION**  
13-17 OCTOBER 2025, BRUSSELS

Training for Data Journalists

Home / Training for Data Journalists

- **Meteorology & Computing:** Advanced courses in Numerical Weather Prediction, use of ECMWF forecast products and computing services. <https://www.ecmwf.int/en/learning/training>
- **Copernicus:**
  - Training in support to key partnerships (E.g. European DGs, UN entities, regional organisations)
  - Jointly organized training activities ESA, EUMETSAT
  - Training specific user communities/ Sectors (journalists)
  - C3S Massive Open Online Course (MOOC) <https://climate.copernicus.eu/online-course-understanding-climate-data>
- **Machine Learning and DestinE**
  - Series of online courses <https://destine.ecmwf.int/machine-learning-training/>

# FAIR eLearning resources

New version of ECWMF learning catalogue launched 2026!

1 <https://www.ecmwf.int/en/learning>

Learning

Workshops and seminars play an integral part of the way ECWMF develops and interacts with its partners. ECWMF events are a platform for collaboration – whether they are face to face or virtual, they allow us to interact with our community, learn and share knowledge, review latest achievements but also discuss ways to tackle some scientific challenges we share with our community.

Many of our events use a combination of in-person and digital elements, allowing attendees to choose whether to take part in-person or virtually. This hybrid approach lets our events reach more attendees while reducing environmental impact. Details of our event formats are given on the individual event webpages.

Training: Join our in-class lessons or learn at your own pace through a range of videos, masterclasses, and guided modules.

Workshops and Annual Seminar: Looking to dive deeper into a topic? Join year-round workshops or the in-depth Annual Seminar each September.

Informal seminars: We regularly organise informal seminars given by internal or external speakers on a range of topics.

Training resources: Explore our library of learning materials: GitHub repositories, NWP lecture notes, and eLearning content for your training journey.

Navigation: Home, About, Forecasts, Computing, Research, Learning, Publications

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Find classes, courses, tutorials, etc... Search

Events Resources

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Guidelines for training course applications

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CAS training

CAMS training

Machine Learning & DestinE training

See the full catalogue >

UPCOMING

UPCOMING

UPCOMING

Training course: Machine learning and Destination Earth

Event: 23 February, 2026 - 27 February, 2026 | ECMWF

Tags: Machine learning

Training course: Parametrization of subgrid physical processes

Event: 02 March, 2026 - 06 March, 2026 | ECMWF

This five-day course is a combination of lec-

Training course: Data assimilation & Machine Learning

Event: 16 March, 2026 - 20 March, 2026 | ECMWF

Tags: Machine learning

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<https://www.ecmwf.int/en/learning/training/search>

Search by

Keyword

Topic

Event

Resource

Level

Tags

Find classes, courses, tutorials, etc... Search

Showing 1 - 12 of 99 results

Relevance Title Date

Filter by

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Show certification courses only (2)

Topics

- Atmospheric composition (15)
- Climate (53)
- Computing services and tools (13)
- Forecasting (6)
- Machine learning (4)
- Numerical weather prediction (16)

Training events

Educational resources

- Interactive modules (eLearning) (50)
- Jupyter notebooks (49)
- Videos (83)

Level

- Fundamentals (72)
- Others (25)

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- Fundamentals (72)
- Others (25)

COPERNICUS 64 C3S 49 ECV 23

CAMS 15 PHYSICAL PROCESSES 9

PARAMETERISATION 9

OBSERVATIONS 8 UNCERTAINTY 8

ENSEMBLES 6 REANALYSIS 5

COMPUTING 5 IFS 4

DATA ASSIMILATION 4 ERA5 4

Machine Learning for Earth Systems Modelling

Format: Interactive modules (eLearning)

Published: February 2, 2026

Foundations and New Frontiers Online training course 1 From foundations to hands-on applications! 16 March 2026 ...

Understanding Uncertainty in Weather Forecasts

Format: Interactive modules (eLearning)

Published: October 9, 2025

Learn about the main sources of uncertainty in weather forecasting and how they are addressed in early warning systems.

Understanding Climate Data

Format: Interactive modules (eLearning)

Published: May 7, 2025

From analysis of the past to future projections Short online course Because you don't have to be a climate scientist to make climate data work for you! ...

SAPP Data Driven Processing Diagram

Introduction to the Scalable Acquisition and Pre-Processing (SAPP) system

Computing warm & wet days agroclimatic indicator under future climate change

Visualising a full climate data record of multi-sensor aerosol data

Format: Jupyter notebooks

# CAMS National Collaboration Programme and Training



The map shows participating countries in blue: Iceland, Norway, Sweden, Finland, Estonia, Latvia, Lithuania, Poland, Czechia, Slovakia, Hungary, Romania, Bulgaria, Greece, France, Germany, Italy, Austria, Switzerland, Belgium, Netherlands, United Kingdom, Ireland, Denmark, and Malta. Other countries shown in grey are Morocco, Algeria, Tunisia, and Belarus. Logos for participating organizations are placed around the map: DWD (Germany), University of Tartu (Estonia), Latvijas Universitāte (Latvia), IOŚ-PIB (Poland), METEO ROMANIA (Romania), INERIS (France), CoLAB ATLANTIC (Belgium), and National Observatory Athens (Greece).

Objective is to strengthen capacity and uptake of CAMS data/products and services through education and training activities, with a clear focus on expanding usage beyond existing expert communities:

The scope of these activities shall:

- Mapping and meet **training needs** across key sectors, user groups and key entities at the national, **regional or local scale** to complement, and leverage, the wider CAMS training activities
- Use local languages
- create new customised training resources
- organise training events.

# C3S National Collaboration Programme and Education & Learning



Objective is to strengthen capacity and uptake of C3S data through education and training activities, with a clear focus on expanding usage beyond existing expert communities:

## ***Develop learning and educational resources***

Create high-quality training materials based on C3S data to support understanding and practical use of climate information.

## ***Facilitate access for new audiences***

Enable non-expert users (e.g. students, public authorities, practitioners) to effectively use and interpret C3S products.

## ***Upskill key stakeholders***

Build technical and applied knowledge among national authorities and organisations to improve climate-related decision-making and service development.

## ***Promote awareness and uptake of C3S***

Increase visibility and understanding of C3S services at national level, contributing to broader adoption.

Greece · National Observatory of Athens

### **Climate-Edu**

Curriculum-aligned Greek-language educational resources (MOOCs, summer schools, BSc/MSc courses) targeting university students and secondary school pupils using C3S data.



Germany · Deutscher Wetterdienst

### **C3S-KlimaKompetenz**

Modular MOOC on the EO College platform plus webinars and handbooks covering four pillars: climate basics, EO in monitoring, practical CDS use, and AI/ML in climate science.



Latvia · University of Latvia

### **H-EXTREMES-LV**

Multi-level C3S education framework linking schools, universities and spatial planners to build climate & data literacy and enable evidence-based adaptation to hydrometeorological extremes.



Czechia · Charles University

### **Copernicus Climate Academy**

Open-access Czech-language training materials supporting practical use of C3S data, tools and services for university students, teachers, professionals and public authorities.



United Kingdom · Royal Meteorological Society

### **C3S data to raise the quality of climate education**

Classroom-ready resources for ages 16–18 in Maths & Geography, mapped to the UK national curriculum, with teacher training to embed C3S data into climate education.



Thank you  
for your attention

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