

Training course, “A hands-on introduction to Numerical Weather Prediction Models: Understanding and Experimenting”

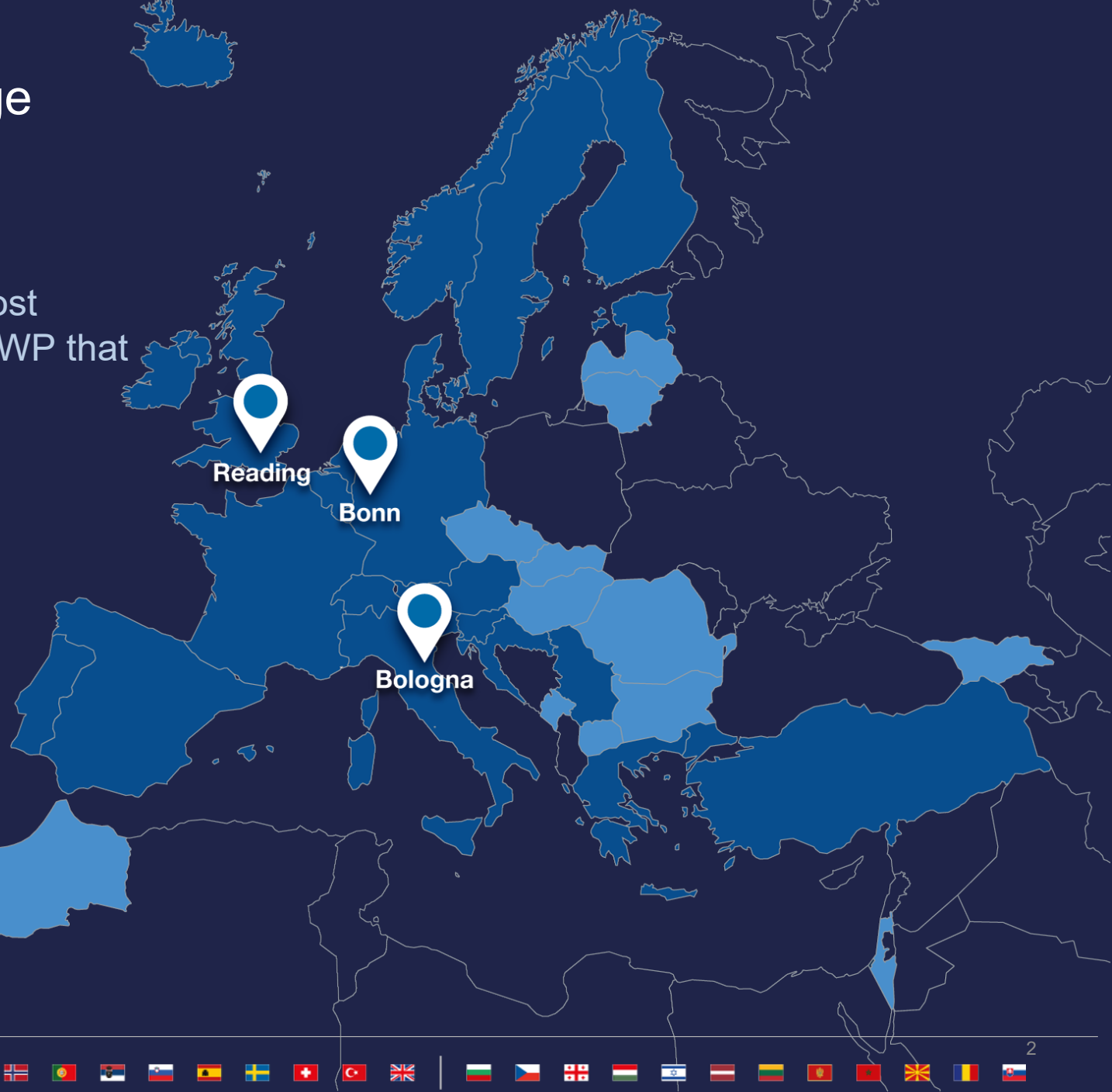
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ECMWF's role is to address the critical and most difficult research problems in medium-range NWP that no one country could tackle on its own



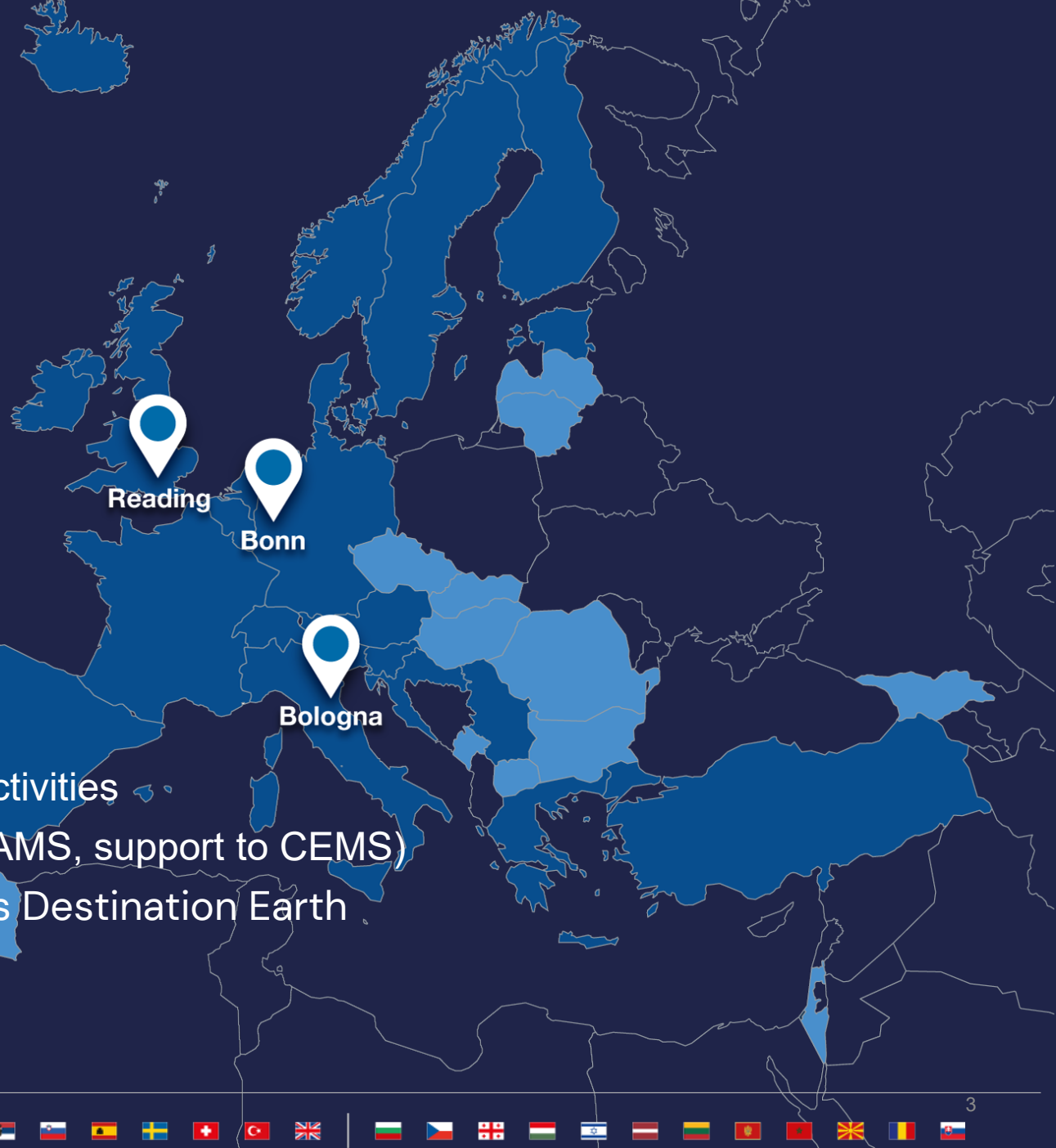
European Centre for Medium-Range Weather Forecasts (ECMWF)

ECMWF is an international organisation with

- 23 Member States
- 12 Cooperating States

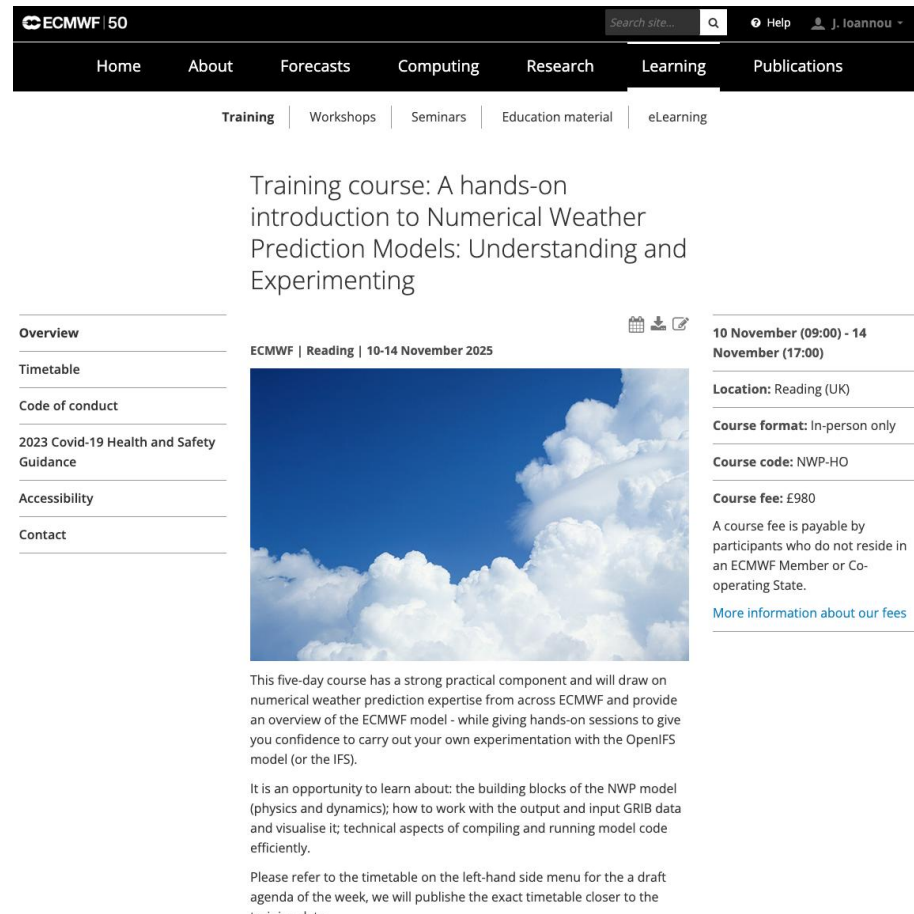
Three sites in UK, Italy and Germany

- Both research institute & 24/7 operational centre
- Established in 1975
- Advanced training = one of ECMWF's strategic activities
- Entrusted entity for Copernicus services (C3S, CAMS, support to CEMS)
- One of three Entrusted Entities delivering EU's Destination Earth



NWP training course: A hands-on introduction to Numerical Weather Prediction Models: Understanding and Experimenting

- Course webpage: <https://events.ecmwf.int/event/473/>
- ECMWF training: <https://www.ecmwf.int/en/learning>
- eLearning resources <https://learning.ecmwf.int/>



The screenshot shows the ECMWF Learning page for the training course. The header includes the ECMWF logo and navigation links. The main content area features the course title, a description, and a list of links for more information.

ECMWF 50

Search site... Help J. Ioannou

Home About Forecasts Computing Research Learning Publications

Training Workshops Seminars Education material eLearning

Training course: A hands-on introduction to Numerical Weather Prediction Models: Understanding and Experimenting

Overview

Timetable

Code of conduct

2023 Covid-19 Health and Safety Guidance

Accessibility

Contact

ECMWF | Reading | 10-14 November 2025

10 November (09:00) - 14 November (17:00)

Location: Reading (UK)

Course format: In-person only

Course code: NWP-HO

Course fee: £980

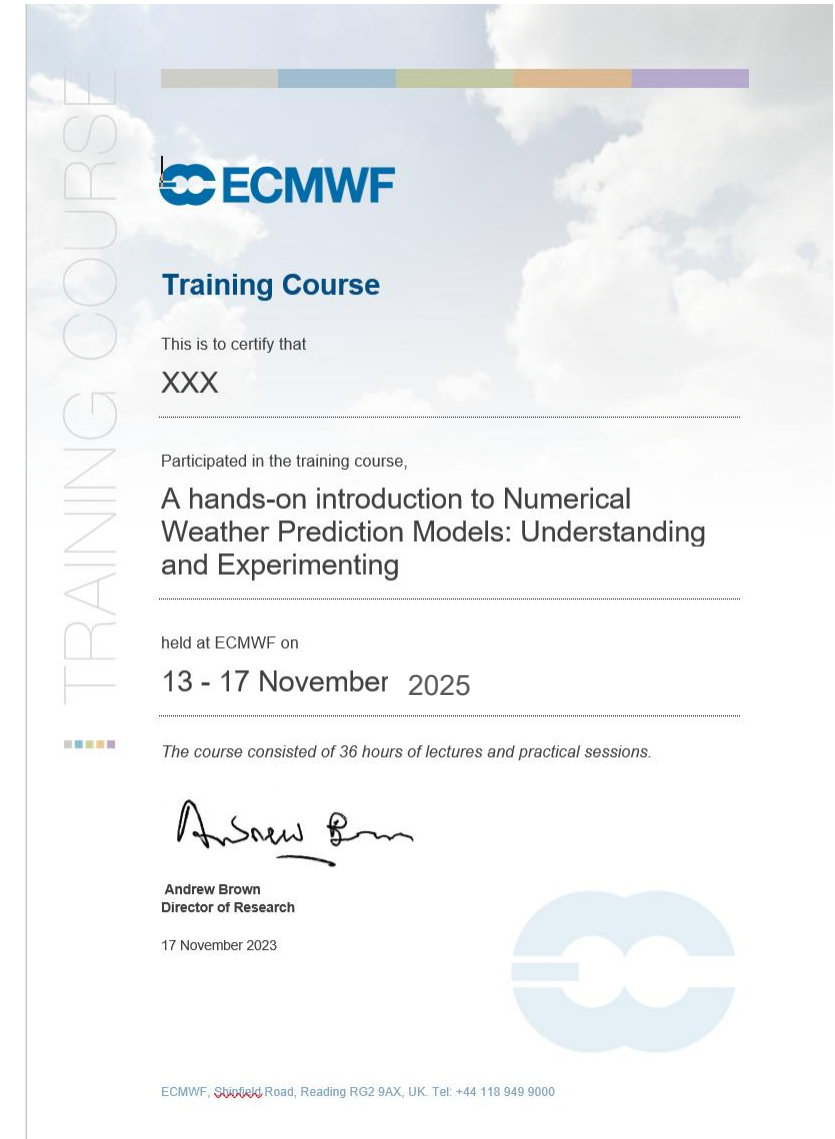
A course fee is payable by participants who do not reside in an ECMWF Member or Co-operating State.

[More information about our fees](#)

This five-day course has a strong practical component and will draw on numerical weather prediction expertise from across ECMWF and provide an overview of the ECMWF model - while giving hands-on sessions to give you confidence to carry out your own experimentation with the OpenIFS model (or the IFS).

It is an opportunity to learn about: the building blocks of the NWP model (physics and dynamics); how to work with the output and input GRIB data and visualise it; technical aspects of compiling and running model code efficiently.

Please refer to the timetable on the left-hand side menu for the a draft agenda of the week, we will publish the exact timetable closer to the start date.



The image shows a training course certificate from ECMWF. It includes the course title, dates, location, and a signature of Andrew Brown, Director of Research. The certificate is dated 17 November 2023.

TRAINING COURSE

ECMWF

Training Course

This is to certify that

XXX

Participated in the training course,

A hands-on introduction to Numerical Weather Prediction Models: Understanding and Experimenting

held at ECMWF on

13 - 17 November 2025

The course consisted of 36 hours of lectures and practical sessions.

Andrew Brown

Andrew Brown
Director of Research

17 November 2023

ECMWF, Shipfield Road, Reading RG2 9AX, UK. Tel: +44 118 949 9000

General Housekeeping

Access to Centre

- Please sign in/out each day at reception

Personal belongings

- Do not leave any personal belongings at ECMWF outside office hours.
- We recommend that you do not leave valuables unattended in the classroom or any other part of the building.
- ECMWF will not take any responsibility for items lost at the premises.

Smoking

- Smoking is not allowed inside the building. Please ask at Reception Desk and you will be directed to the outside smoking area.

Enquiries

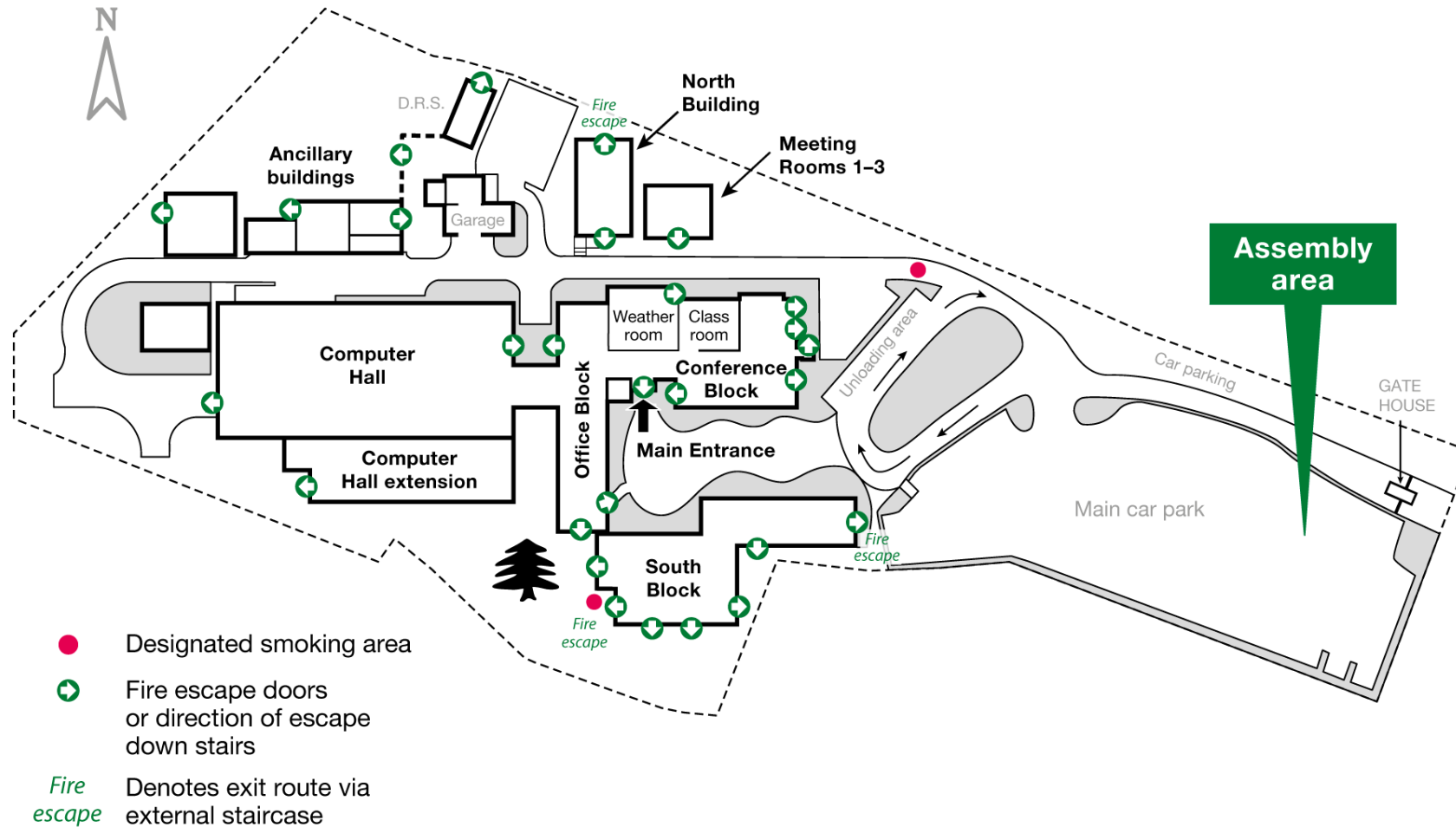
- If you have any questions, please contact the Reception Desk who will liaise with the course organisers.

Make the most of the training!

- Please don't check emails on the computers, or on other devices 😊
- There are no stupid questions!

General Housekeeping

Fire Escapes and Assembly Area



Visitor WiFi

Follow these steps to use the visitor WiFi

1. From the list of available SSIDs, select "ECMWF-Visitors"
2. Log in with password (ECMWF1975!)
3. Enter your details in the appropriate boxes on the registration screen, and ECMWF email (sophie.marsden@ecmwf.int) and press the Register button.
4. You will be redirected to a page that informs you of a successful registration and provides your personal Access key.

Restaurant

- The restaurant provides the following daily services:
 - Light breakfast from 08:00
 - Lunch: hot counter choices, salads, sandwiches, soup and desserts.
- Please speak to the restaurant staff if you have any special dietary requirements.
- The restaurant can only accept chip and pin and contactless card payments.
- Coffee/tea will be supplied during the breaks as specified on the programme.

Timetable: Mon/Tue

Monday, 10 November				
08:45 → 09:15	Registration opens	📍	🕒 30m	✎
09:15 → 10:15	Welcome, course overview, introductions Speakers: Adrian Hill (ECMWF), Andy Brown (ECMWF), Christopher Stewart (ECMWF), Marcus Koehler (ECMWF)		🕒 1h	✎
10:15 → 10:40	Coffee break	📍	🕒 25m	
10:40 → 11:45	Building blocks of the forecast systems at ECMWF Speaker: Sarah Keeley (ECMWF)	📍	🕒 1h 5m	✎
11:45 → 11:55	Comfort break	📍	🕒 10m	
11:55 → 13:00	Getting started with the OpenIFS model Speaker: Marcus Koehler (ECMWF)	📍	🕒 1h 5m	✎
13:00 → 14:00	Lunch break	📍	🕒 1h	
14:00 → 15:05	Introduction to Parallel Programming, OpenMP vs MPI Speaker: Iain Miller (ECMWF)	📍	🕒 1h 5m	✎
15:05 → 15:20	Coffee break	📍	🕒 15m	
15:20 → 16:50	Submitting our first experiment Speaker: Marcus Koehler (ECMWF)	📍	🕒 1h 30m	✎
16:50 → 18:00	Ice breaker	📍	🕒 1h 10m	

Tuesday, 11 November				
09:10 → 10:15	Introduction to Physical Processes in the IFS Speaker: Richard Forbes (ECMWF)	📍	🕒 1h 5m	✎
10:15 → 10:40	Coffee break & group photo	📍	🕒 25m	
10:40 → 11:45	Introduction to ecCodes and GRIB Speaker: Paul Dando (ECMWF)	📍	🕒 1h 5m	✎
11:45 → 11:55	Comfort break	📍	🕒 10m	
11:55 → 13:00	Introduction to Metview and Python API Speakers: Sandor Kertesz, Iain Russell (ECMWF)	📍	🕒 1h 5m	✎
13:00 → 14:00	Lunch break	📍	🕒 1h	
14:00 → 15:05	Plotting our results Speakers: Sandor Kertesz, Iain Russell (ECMWF), Marcus Koehler (ECMWF)	📍	🕒 1h 5m	✎
15:05 → 15:20	Coffee break	📍	🕒 15m	
15:20 → 16:50	Planning and submitting perturbation experiments Speaker: Marcus Koehler (ECMWF)	📍	🕒 1h 30m	✎

Timetable: Wed/Thu/Fri

Wednesday, 12 November			
09:10 → 10:15	Spectral transform method Speaker: Andreas Müller (ECMWF)	📍	🕒 1h 5m
10:15 → 10:40	Coffee break	📍	🕒 25m
10:40 → 11:45	Introduction to the dynamical core Speaker: Michail Diamantakis (ECMWF)	📍	🕒 1h 5m
11:45 → 11:55	Comfort break	📍	🕒 10m
11:55 → 13:00	Perturbation experiments - Code Modifications Speaker: Marcus Koehler (ECMWF)	📍	🕒 1h 5m
13:00 → 14:00	Lunch break	📍	🕒 1h
14:00 → 15:05	A day in the life of a model developer	📍	🕒 1h 5m
15:05 → 15:20	Coffee break	📍	🕒 15m
15:20 → 16:50	A day in the life of a model developer	📍	🕒 1h 30m
16:50 → 18:50	Pub visit	📍	🕒 2h

Thursday, 13 November			
09:10 → 10:15	Analysing results from perturbation experiments Speaker: Marcus Koehler (ECMWF)	📍	🕒 1h 5m
10:15 → 10:40	Coffee break	📍	🕒 25m
10:40 → 11:45	Surface processes, lake model and climate fields Speaker: Margarita Choulga (ECMWF)	📍	🕒 1h 5m
11:45 → 11:55	Comfort break	📍	🕒 10m
11:55 → 13:00	Radiative processes - ECRAD Speaker: Robin Hogan (ECMWF)	📍	🕒 1h 5m
13:00 → 14:00	Lunch break	📍	🕒 1h
14:00 → 15:05	SST experiments Speaker: Sarah Keeley (ECMWF)	📍	🕒 1h 5m
15:05 → 15:20	Coffee break	📍	🕒 15m
15:20 → 16:50	The Single Column Model in OpenIFS Speaker: Adrian Hill (ECMWF)	📍	🕒 1h 30m

Friday, 14 November			
09:10 → 10:15	ERA5 Overview and CDS demonstration Speakers: Edward Comyn-Platt, Hans Hersbach (ECMWF)	📍	🕒 1h 5m
10:15 → 11:30	Coffee break & networking	📍	🕒 1h 15m
11:30 → 11:55	Using the OpenIFS Data Hub Speaker: Marcus Koehler (ECMWF)	📍	🕒 25m
11:55 → 13:05	Discussions and course wrap-up	📍	🕒 1h 10m





Good luck with the training!