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

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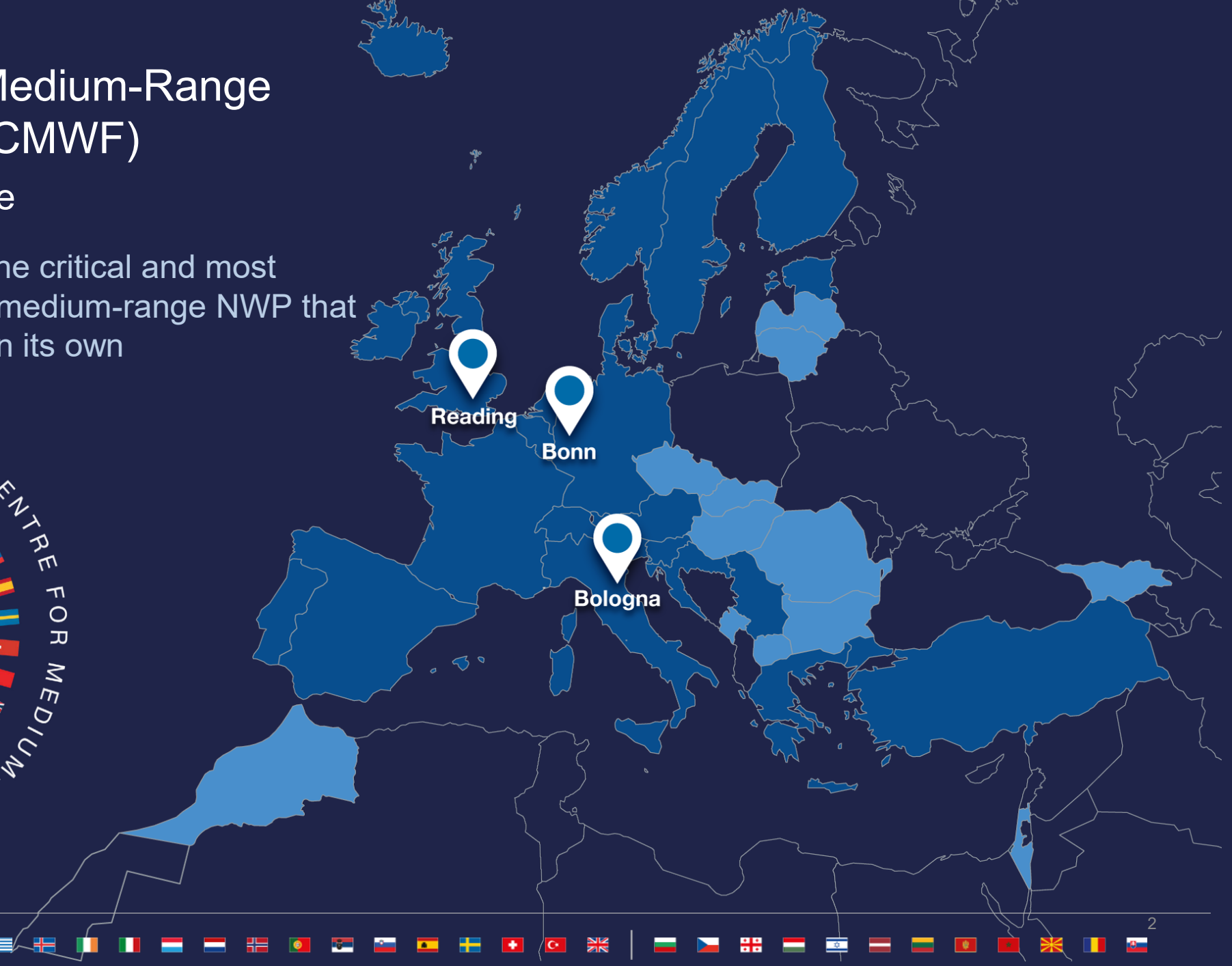
European Centre for Medium-Range Weather Forecasts (ECMWF)

Three sites: one unique role

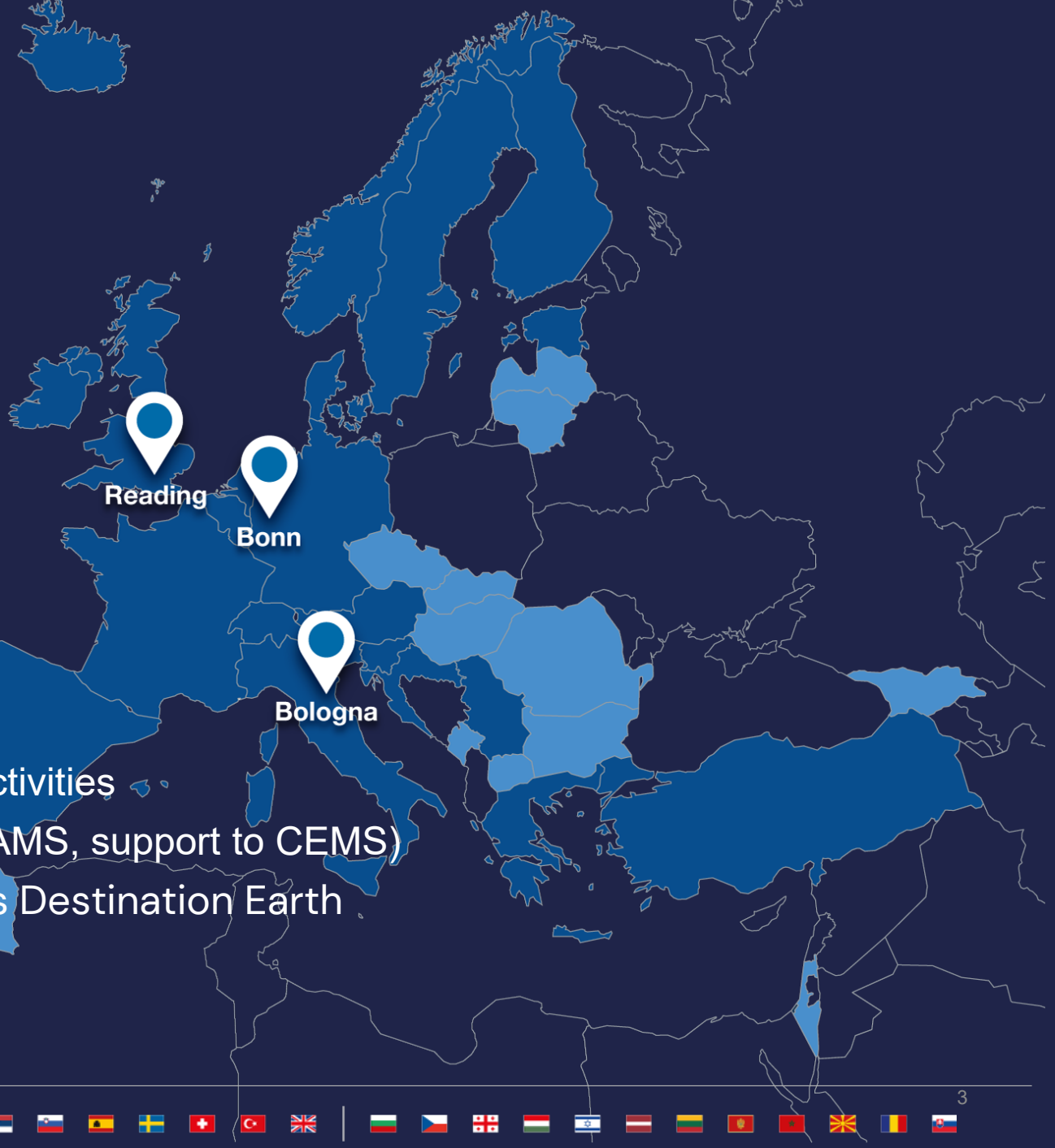
ECMWF's role is to address the critical and most difficult research problems in medium-range NWP that no one country could tackle on its own



European Centre for Medium-Range Weather Forecasts (ECMWF)

ECMWF is an international organisation with

- 23 Member States
- 12 Cooperating States

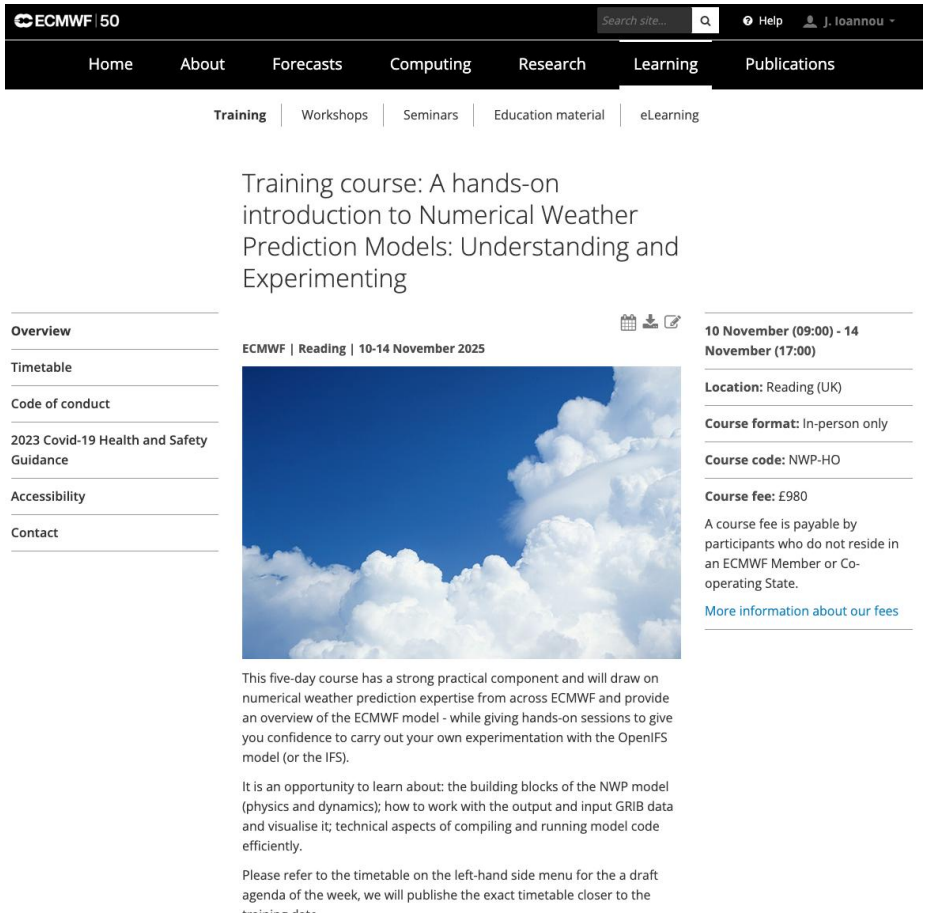


Three sites in UK, Italy and Germany

- 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/



ECMWF

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.

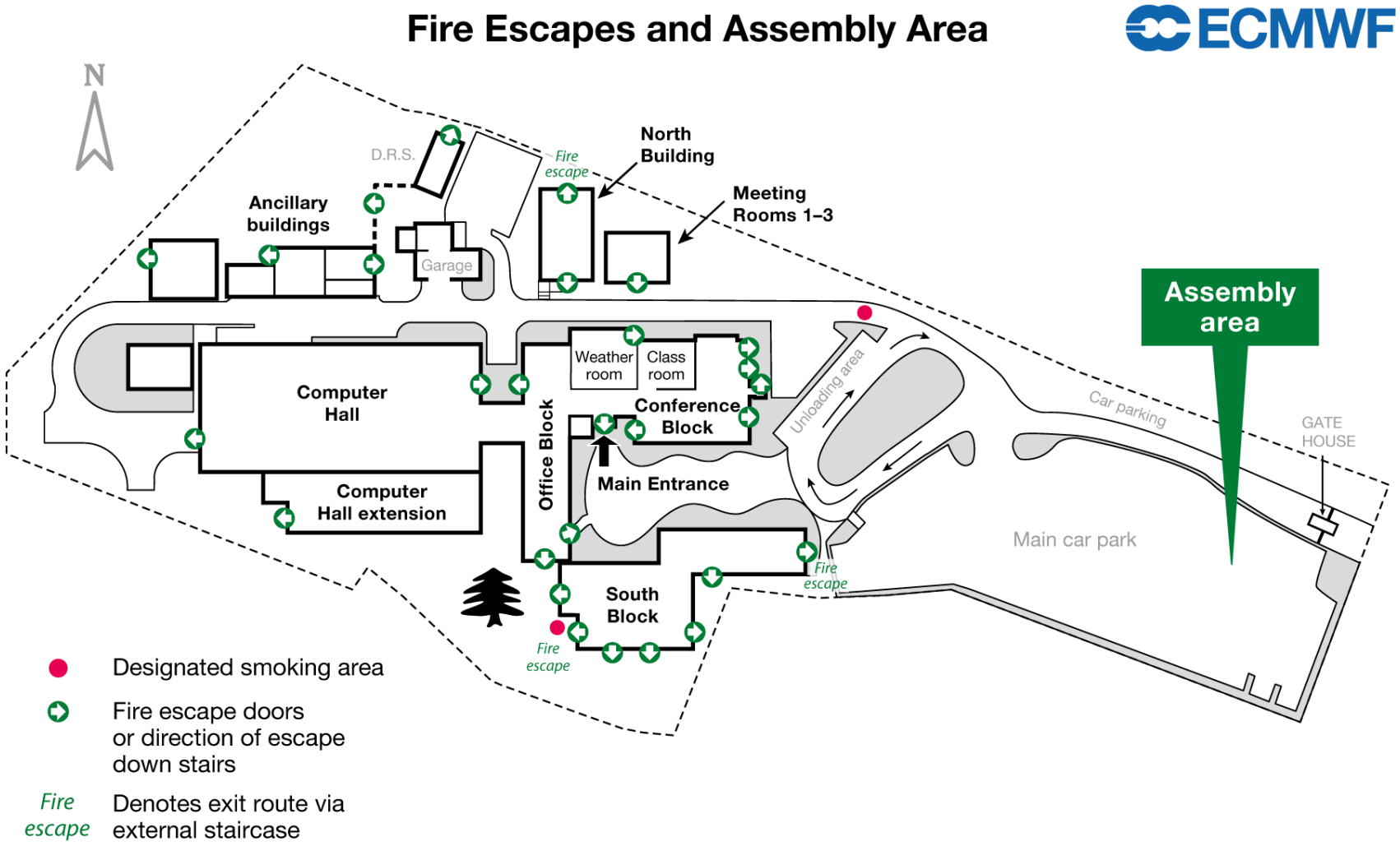
Enquiries

- 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



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

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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!