

21-26 June 2026
Faro, Algarve, Portugal

Final program



FONDA

FOstering Nitrogen Deposition
Assessment over Portugal

<https://fonda.web.ua.pt>

Summer School

Ecosystems at risk:
Modelling reactive nitrogen

This summer school offers an integrated and hands-on introduction to reactive nitrogen in the atmosphere and ecosystems, from fundamental processes to policy relevance. Participants will explore the **reactive nitrogen budget and the modelling systems used to study this budget**.

The programme covers **key atmospheric processes, including chemistry, transport, and deposition, alongside state-of-the-art atmospheric modelling and mapping approaches**.

The ecological consequences of nitrogen pollution and the role of European environmental policies are addressed to connect science with decision-making.

Through practical exercises, participants will gain **hands-on experience** with atmospheric stability analysis, chemistry-transport models, deposition and critical load calculations, and satellite data processing, equipping them with concrete tools for research and applied environmental assessment.

Location

University of Algarve | Campus da Penha, Faro

Agenda

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
9:00-10:00	Social event & Ice-breaker	Introduction	Atmospheric mixing and transport	Land-use and vegetation	Wet deposition	Critical Loads modelling & mapping
10:00-11:00		Nitrogen cycle		Exercise I	Surface exchange processes	
11:00-12:00			Introduction to nitrogen chemistry		Dry deposition parameterizations	Remote sensing techniques for NO ₂ and NH ₃
12:00-13:00		Lunch		Lunch		
13:00-14:30		NO _x emissions	Atmospheric chemistry (2)	Dry deposition modelling	Remote sensing applications for NO ₂ and NH ₃	Final hands-on: deposition & critical loads
14:30-15:30		Ammonia emissions	Chemistry Transport Modelling	Exercise II	Exercise IV	
15:30-17:00		Atmospheric chemistry (1)				Recap
					Social dinner	

Lecturers

Alexandra Monteiro (UAveiro, Portugal)
Beatriz Herrera Gutierrez (TNO, The Netherlands)
Carla Gama (UAveiro, Portugal)
Christophe Flechard (INRAE, France)
Cristina Branquinho (University of Lisbon, Portugal)
Diogo Lopes (UAveiro, Portugal)

Markus Thürkow (FU Berlin, Germany)
Martijn Schaap (FU Berlin, Germany)
Ole Nielsen (University of Copenhagen, Denmark)
Sabine Banzhaf (FU Berlin, Germany)
Thomas Plha (UBA, Germany)
FONDA PhDs: André Barreirinha & Daniel Helm