





Summer School on "Prediction Across Timescales: Predictability Assessment and Communication of Uncertainty for Applications in Environment and Society"

Date: 23-27 February, 2026

Location: Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires,

Argentina.

Background

Forecasts on sub-seasonal to inter-decadal timescales have a diverse range of applications in climate services, including disaster preparedness, and short-mid- and long-term planning. However, the complexity of methods, uncertainty assessment and ways to merge forecasts across timescales presents a significant knowledge and skill gap.

The Summer School on Climate Prediction Across Timescales aims to address these gaps, and it is designed for early-career researchers and advanced students interested in the science and application of climate predictions. The school will offer foundational and advanced lectures in the mornings and interactive, hands-on lab sessions in the afternoons.

The target audience of the school is: Graduate students and postdocs in atmospheric, climate, and data sciences; and junior researchers and professionals working in climate services or operational prediction. Participants are expected to have a basic background in climate science, statistics, or a related field; basic programming skills are expected, proficiency in Python is encouraged but not required.

Objectives and outcomes

- Foster understanding of key concepts including predictability, forecast skill, sources of predictability, and cross-timescale interactions
- Provide an overview of novel tools to determine the predictability and assess forecast skill.
- Introduce emerging tools in machine learning and AI for forecasting.
- Develop practical skills through interactive lab sessions focused on real data

Participants will:

- Gain new theoretical and technical skills
- Engage in group discussions and applied exercises with real (i.e. not synthetic) data.

Tentative Programme

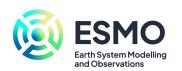
Monday 23 February







Welcome and introduction			
9:00-9:10	Welcome		
9:10-10:30	 Introduction to Prediction Across Timescales: what, why and how? Seamless predictions and modelling: state of the art Introduction to S2S prediction Introduction to interannual to decadal prediction 		
10:30-11:00	Coffee Break		
	Preprocessing forecasts		
11:00-12:30	- Systematic errors, errors correction - Model calibration		
12:30-14:00	Lunch		
14:00-15:30	Hands-on session The first hands-on session introduces participants to key datasets and tools, providing a practical complement to the morning's theoretical foundations.		
15:30-16:00	Coffee Break		
16:00-18:00	Poster & connect session. Participants are invited to bring a poster on their research and they will receive feedback from WGSIP members and peers		
	Tuesday 24 February		
	Understanding and measuring predictability		
9:00-10:30	- Sources of predictability across timescales - Identifying Sources of Predictability via Causality and Information Theory		
10:30-11:00	Coffee Break		
Predictions across timescales			
11:00-12:30	- Cross-timescale Interference: Theory, Mechanisms, and Implications - Bridges of Opportunity to Merge Predictions Across Timescales		
12:30-14:00	Lunch		
14:00-15:30	Hands-on session Applied exercises related to predictability diagnostics and strategies for merging forecast information from multiple timescales.		
15:30-16:00	Coffee Break		
16:00-17:00	Hands-on session		
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Wednesday 25 February Novel methods in climate forecasting		
10:30-11:00	Coffee Break	
	Forecast evaluation	
11:00-12:30	- Verification of forecasts - Probabilistic predictability assessment	
12:30-14:00	Lunch	
14:00-15:30	Hands-on session Practical implementation of ML algorithms, verification tools and probabilistic assessment using real-world forecast data.	
15:30-16:00	Coffee Break	
16:00-17:00	Hands-on session	
	Thursday 26 February	
Climate prediction in practice		
9:00-10:30	- Coordination for Climate Prediction - Co-production of Climate Information	
10:30-11:00	Coffee Break	
11:00-12:30	- Science communication for climate prediction	
12:30-14:00	Lunch	
14:00-15:30	Hands-on session Participants engage in exercises focused on designing communication strategies and co-developing forecast products with end users.	
15:30-16:00	Coffee Break	
16:00-17:00	Hands-on session	
Friday 27 February		







9:00-10:30	Participant's presentations
10:30-11:00	Coffee Break
11:00-12:30	Participant's presentations Closing remarks
12:30-14:00	Lunch