10th International Summer School on

"Climate of the Baltic Sea Region"

26 August – 2 September 2024

co-organized by
Leibniz Institute for Baltic Sea Research Warnemünde (IOW), University of Rostock and
International Baltic Earth Secretariat at Helmholtz-Zentrum Hereon
under the umbrella of Baltic Earth (baltic.earth)

Day	Mon 26/8	Tue 27/8	Wed 28/8	Thu 29/8	Fri 30/8	Sat 31/8	Sun 1/9	Mon 2/9
General topic	Introduction; student presentations	Fundamental processes of the climate system; climate variability; paleoclimate	Statistical methods; physical oceanography of the Baltic Sea	Physical oceanography of the Baltic Sea and climate variability	Eutrophication, hypoxia; carbon cycle; past Baltic Sea climate	Projections; biological oceanography; science communication	Students' presentations	Travel from Askö
Speaker/title Morning session 09:00-10:30 (2 x 45 min)		Markus Meier: Fundamental processes of the climate system	Sebastian Wagner: Introduction into statistical methods of time series I	Markus Meier: Physical oceanography of the Baltic Sea and other regional seas, part II	Markus Meier: Climate variability of the Baltic Sea, part II	Anju Mallissery: Biogeochemical processes, eutrophication and hypoxia	Examination (45 minutes)	Travel from Askö
Break 10:30-11:00								
11:00-12:30 (2 x 45 min)	Travel to Askö and logistic informations	Markus Meier: Climate modeling – the global and regional perspective II	Sebastian Wagner: Introduction into statistical methods of time series II	Markus Meier: Physical oceanography of the Baltic Sea and other regional seas, part III	Elinor Andren: History of the Baltic Sea and past changes	Markus Meier: Future projections and their uncertainties	Markus Meier: How to write a good proposal	
Lunch break 12:30-15:00 (Lunch 13:00)								
Speaker/title Afternoon session: 15:00-16:30 (2 x 45 min)	Markus Meier and Sven Karsten: Course introduction and jupyter notebooks	Sven Karsten: Exercises on data formats (netcdf) and visualization of observations of water temperature, salinity and oxygen concentration, location maps	Sebastian Wagner: Paleoclimate variability	Sven Karsten: Exercises on the analysis of the variability of Major Baltic Inflows (wavelet analysis, trend, correlation to the atmospheric circulation, etc.)	Sven Karsten: Exercises on wavelet analysis continued	Sven Karsten and Anju Mallissery: Exercises on the analysis of observed temperature, salinity and oxygen concentration profiles	Students' group presentations	
Break 16:30-17:00								
17:00-18:30 (2 x 45 min)	Short student presentations of previous thesis	Sebastian Wagner: Exercises on time series analysis using	Markus Meier: Physical oceanography of the Baltic Sea and	Markus Meier:	Marcus Reckermann: Biological	Marcus Reckermann: Science communication	Students' group presentations; résumé of the school	

	work (3 min, each)	statistical methods, rolling dices	other regional seas, part I	Climate variability of the Baltic Sea, part I	oceanography and marine organisms			
Dinner 18:30-20:00 (Dinner 19:00)								
20:00-21:30	Social activity (Ice breaker)	Students group work with jupyter notebooks	Students group work on the proposal	Students group work on the proposal	Students group work on the proposal	Markus Meier: Repetition and preparation for the exam	Social activity (Barbeque)	

Lectures	Hours	Contents
Prof. Markus Meier	24	Physical oceanography and meteorology, climate science
Dr. Marcus Reckermann	4	Biological oceanography and marine organisms
Dr. Sebastian Wagner	6	Paleoclimate variability and statistical methods
Dr. Anju Mallissery	2	Biogeochemical cycles
Prof. Elinor Andren	2	History and past changes

Seminar	Hours	Contents
Prof. Markus Meier	6	Students' presentations supervised by Markus Meier

Exercises and tutorials	Hours	Contents
Prof. Markus Meier, Dr. Sebastian Wagner, Dr. Sven Karsten, Dr. Anju Mallissery	18	Exercises, tutorials, and students group work