

PEEX-Academic Challenge – FIRST+ Intensive Course



FINNISH NATIONAL
AGENCY FOR EDUCATION

“Multi-Scales and -Processes Modelling and Assessment for Environmental Applications”

Location/ Host: Russian State Hydrometeorological University (RSHU, St.Petersburg, Russia)

Timeline: 20-25 April 2020

(arrivals: Sunday, 19 Apr 2020 & Course starts from Monday, 20 Apr until Saturday, 25 Apr & departures: Sat/Sun, 25-26 Apr)

	Day 1 - 20 Apr	Day 2 – 21 Apr	Day 3 - 22 Apr	Day 4 – 23 Apr	Day 5 – 24 Apr	Day 6 – 25 Apr
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
08:30 – 09:15	Registration, welcome & useful info	L4. Multi-model ensembles of climate change simulations (Jouni Räisänen, UH)	L8. Physiographical data for multi-scale modelling (Alexander Mahura & Risto Makkonen, UH)	L12. Atmospheric gas-phase chemistry (Sergey Smyshlayev, RSHU)	L16. Aerosol - cloud - radiation interactions (Tuukka Petäjä, Risto Makkonen, Alexander Mahura, UH)	Exercises
09:20 – 10:05	L1. Introduction to PEEEX program (Markku Kulmala, Hanna Lappalainen, UH; with focus on science education component)	L5. Numerical schemes (Maxim Motsakov, RSHU)	L9. Process-based modelling for meteorology-chemistry-aerosol System (Michael Boy, UH)	L13. Atmospheric liquid-phase chemistry (Sergey Smyshlayev, RSHU)	L17. Chemical (& meteorological) data assimilation (Polina Blakitnaya, RSHU & Michel Boy, UH)	
10:05 – 10:25	Coffee/ Tea Br.	Coffee/ Tea Br.	Coffee/ Tea Br.	Coffee/ Tea Br.	Coffee/ Tea Br.	Coffee/ Tea Br.
10:25 – 11:10	L2. Numerical weather prediction and specific challenges (Sergey Smyshlayev, RSHU)	L6. Atmospheric chemical transport modelling & emissions (Sergey Smyshlayev, RSHU)	L10. Atmospheric boundary layer and dispersion processes (Sergey Zilitinkevich, UH)	L14. Aerosol particles properties (Tuukka Petäjä, UH)	L18. Evaluation of models and verification (Part 1 - meteorology) (Sergey Smyshlayev, RSHU & Risto Makkonen, Alexander Mahura, UH)	Students oral presentations
11:15 – 12:00	L3. Earth system modelling and and specific challenges (Risto Makkonen, UH)	L7. Seamless/ online integrated modelling (Alexander Mahura, UH)	L11. Atmospheric boundary layer and removal processes (Sergey Zilitinkevich, UH)	L15. Aerosol chemistry and microphysics (Tuukka Petäjä, UH)	L19. Evaluation of models and verification (Part 2 – atmospheric composition) (Sergey Smyshlayev, RSHU & Risto Makkonen, Alexander Mahura, UH)	
12:00 – 13:30	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
13:30 – 14:15	Exercises	Exercises	Exercises	Exercises	Exercises	Awarding diplomas ceremony & Official closure of the Intensive Course
14:20 – 15:05	Exercises	Exercises	Exercises	Exercises	Exercises	
15:10 – 15:55	Exercises	Exercises	Exercises	Exercises	Exercises	
15:55 – 16:15	Coffee/ Tea Br.	Coffee/ Tea Br.	Coffee/ Tea Br.	Coffee/ Tea Br.	Coffee/ Tea Br.	
16:20 – 17:05	Exercises	Exercises	Exercises	Exercises	Exercises	
17:10 – 17:55	Exercises	Exercises	Exercises	Exercises	Exercises	
18:00 – 18:45	Exercises	Exercises	Exercises	Exercises	Exercises	

19:00 –	<i>Ice Breaking Party</i>	<i>St.Petersburg city Excursion</i>	<i>Official Dinner</i>	<i>RSHU Excursion (after lunch)</i>	Free Time / CitySightseeing	Free Time / CitySightseeing
		<p>Practical exercises: as Small-Scale Research Projects (SSRP) on seamless/ online integrated meteorology-chemistry-aerosols multi-scale and – multi-processes EC-Earth, Enviro-HIRLAM, MALTE-Box modelling for environmental applications (4-5 students per project) led by teachers (whom designed and realized the exercise – Michael Boy, Alexander Mahura, Risto Makkonen, Univ Helsinki) from 1st day till official oral presentation/ defence of SSRP outcomes).</p>				
		<p>Socializing events: for participants - 1) Ice-Breaking Party, 2) Official Dinner, 3) Excursion to the City of St.Petersburg, 4) Excursion to RSHU University (will be organized after the lunch (for appx. 1-2 h period) and then exercises will be continued), and 5) Free Time / City Sightseeing</p>				
		<p>Lectures covering aspects of: Fundamentals of atmospheric processes and modelling, surface and atmospheric boundary layer processes, atmospheric chemical transport modelling, aerosol physics and chemistry and modelling, evaluation and application</p>				
		<p>Finals: Oral presentations & defence of SSRP – with awarding diplomas (3 ETCS) ceremony for students successfully presented and defended their projects, and official closure of the intensive training</p>				