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TFK 2021, Team Finland Knowledge programme



Pan-Eurasian EXperiment – Finnish-Russian Earth System Research Network (PEEX-FRESReN)

Kick-Off-Meeting

13 Jan 2022

Partners

Finland

- University of Helsinki (UHEL)
- University of Eastern Finland (UEF)
- Tampere University Technology (TAU)

Russia

- Russian State Hydrometeorological University (RSHU)
- Saint Petersburg State University (SPBU)
- Moscow State University (MSU)

Budget

*) High Education Institutions = HEIs

Total budget

Coordinating institution:	University of Helsinki		
Name of the project:	Pan-Eurasian EXperiment – Finnish-Russian Earth System Research Network (PEEX-FRESReN)		
Agreement number:	122/83/2021		
TFK PROGRAMME GRANT	Nr. of mobilities	Total duration	Planned budget
Number and costs of staff mobilities	40	160	16 000,00
Number and costs of long-term student mobilities	0	0	0,00
Number and costs of short-term student mobilities	96	573	40 110,00
TOTAL AMOUNT FOR TRAVEL COSTS			56 110,00
TOTAL AMOUNT FOR ORGANISATIONAL COSTS			2 970,00
TOTAL AMOUNT FOR SALARIES			12 092,00
			71 172,00
SELF FINANCING			
TOTAL AMOUNT OF SELF FINANCING BY THE PARTNER HEIS			2 700,00
TOTAL AMOUNT OF SELF FINANCING BY THE FINNISH HEIS			6 000,00
			8 700,00
TOTAL PLANNED BUDGET OF THE PROJECT (TFK grant + self financing)			79 872,00

6 Univs x 6-7 travels (up to 4 days each x100 Euros)

6 Univs x 16 travels (up to 6 days each x70 Euros)

(at least 50% of the TFK funding)

(up to 50% of the TFK funding)

(up to 20% of the TFK funding)

each RU Univ 900 Euros

each FI Univ 2000 Euros

Partner budget

Country	Partner	Travels	Organizational	Salaries	total	
FI	INAR	9346,67	3000,00	2015,33	14362,00	
FI	TAU	9346,67		2015,33	11362,00	UH's payment to partner
FI	UEF	9346,67		2015,33	11362,00	UH's payment to partner
RU	MSU	9346,67		2015,33	11362,00	
RU	Russian State Hydromet.Uni. (RSHU)	9346,67		2015,33	11362,00	
RU	St Petersburg State Uni. (SPBU)	9346,67		2015,33	11362,00	
total		56080,00	3000,00	12092,00	71172,00	OPH-TFK share

PEEX- FRESReN

Project's academic discipline(s):

Physical sciences (focus - atmosphere, hydrology, oceanology)

Project's degree level(s):

- * Bachelor (exceptions - best students)
- * Master short-term missions (MSc students)
- * Doctoral short-term missions (PhD students)

Project activities:

- * Mobility initiatives (student/trainee/teacher/staff exchanges)
 - Common study modules, courses and intensive courses

Project schedule:

- Activities take place in 2022-2023

PEEX- FRESReN: Aims

- To carry out joint education activities through students'/teachers' mobility between HEIs partners
- To share knowledge and experience on state-of-the-art research activities and educational assets like e-learning between the project partners
- To open new opportunities for research collaboration in atmospheric and Earth system sciences

PEEX- FRESReN: Activities

- Joint elaboration of top-level research-educational initiatives/ projects based on PEEX Science Plan student's realizations;
- Series of online webinars/ workshops;
- Practical students'/ teachers' short-term mobility/ visits between involved HEIs;
- Face-to-face educational research training course.

FI+RU Students

- **Students' mobility between Univs:**
- **will be linked with realization by students of developed research and educational projects**
(at MSc&PhD levels) on topics like:
- energy fluxes in forest canopy modelling;
- observations and modeling of surface-water ecosystems in boreal areas;
- fluxes of chemical substances by river flow in changing environment;
- aerosol effects on regional (Nordic, North-West Russia) and urban (Helsinki, St.Petersburg, Moscow) scales;
- pollution effects from continuous emissions on population and environment of Nordic countries and Russia;
- observations for aerosol particles and gaseous composition, & many more to be developed student projects.

FI+RU Teachers/Researchers

- **FI mobility to RU Univs:**
- will be linked with realization a series of short-term visits for co-supervising students on research projects and lecturing for topics (described in details in PEEEX Science Plan).
- **RU mobility to FI Univs:**
- will be linked with realization a series of short-term visits for co-supervising students on research projects and lecturing.

Expected Results

- Knowledge transfer of novel Finnish academic education concept and increased use of the modern e-learning methods (MOOC, Climate University);
- Research and educational collaboration between project partners;
- New networking opportunities of high education collaboration in a field of Earth's sciences and climate change research;
- Integration of Univ students into joint FI-RU research activities.

Tasks

- Elaborate top-level research initiatives (TLRI) for students' projects;
- Build Earth system research network between FI-RU HEIs (& expand by inviting new interested HEIs);
- Organize and carry out mobilities (*short-term visits: for students (14)/ teachers (7) for each partner*) between HEIs;
- Organize online webinars/ workshops (*every 2-3 months*) on research and educational topics (based on agendas of PEEEX and each HEI);
- Organize face-to-face intensive training course on “*Multi-Scales and -Processes Observations, Modelling and Assessment for Environmental Applications*” (Aug-Sep 2022, St.Petersburg, RU; hosted by SPBU)
- Disseminate project activities/results;
- Project management, quality assurance and control.

Planned in Spring 2020 but COVID-19 & now in 2022

“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 Monday	Day 2 – 21 Apr Tuesday	Day 3 – 22 Apr Wednesday	Day 4 – 23 Apr Thursday	Day 5 – 24 Apr Friday	Day 6 – 25 Apr 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)	Students oral presentations
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)	Students oral presentations
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	Official closure of the Intensive Course
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	Free Time / CitySightseeing
17:10 – 17:55	Exercises	Exercises	Exercises	Exercises	Exercises	
18:00 – 18:45	Exercises	Exercises	Exercises	Exercises	Exercises	
19:00 –	Ice Breaking Party	St.Petersburg city Excursion	Official Dinner	RSHU Excursion (after lunch)	Free Time / CitySightseeing	

<https://www.atm.helsinki.fi/peex/index.php/portfolio-items/april-2020-postponed-nov-dec-2020-peex-ac-research-training-intensive-course/>

	<p>Practical exercises: as Small-Scale Research Projects (SSRP) on seamless/ online integrated meteorology-chemistry-aerosols multi-scale and – multi-processes Enviro-HIRLAM, EC-Earth, 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>