



EuRuCAS Summer School



Land Hydrology and Cryosphere of the Arctic and Northern Eurasia in the changing climate

29 June, Sunday

- During day **Participant arrivals**
- 19:00 – 21:00 **Icebreaker party**

30 June, Monday

Opening Session

Chair: Leonid Bobylev

- 09:30 – 09:45 Welcome and opening
Summer School goals, format and programme
Leonid Bobylev, EuRuCAS Coordinator, Nansen Centre, St. Petersburg, Russia
- 09:45 – 10:00 EU FP7 Project EuRuCAS: European-Russian Centre for cooperation in the Arctic and Sub-Arctic environmental and climate research
Leonid Bobylev, EuRuCAS Coordinator, Nansen Centre, St. Petersburg, Russia
- 10:00 – 10:45 Space weather and climate change
Jean-Pierre Contzen, von Karman Institute for Fluid Dynamics, Brussels, Belgium
- 10:45 – 11:30 Copernicus Programme: long-term monitoring of Arctic climate and environment
Stein Sandven, Nansen Centre, Bergen, Norway
- 11:30 – 12:00 **Coffee Break**

Session: On-going climate change in the Arctic and Sub-Arctic

Chair: Jean-Pierre Contzen

- 12:00 – 12:45 Arctic dimension of global warming
Genrikh Alekseev, Arctic and Antarctic Research Institute, St. Petersburg, Russia
- 12:45 – 13:30 Changing climate system in the Arctic
Timo Vihma, Finnish Meteorological Institute, Helsinki, Finland

- 13:30 – 14:30 **Lunch**
- 14:30 – 15:15 Satellite ocean colour remote sensing of the Arctic Ocean
Selima ben Mustafa, Stockholm University, Stockholm, Sweden
- 15:15 – 16:00 Primary production in the Arctic Ocean: contemporary estimations and middle-range projected tendencies
Dmitry Pozdnyakov, Nansen Centre, St. Petersburg, Russia
- 16:00 – 16:30 **Coffee Break and student posters**
- 16:30 – 17:15 Climate change in the Arctic: impacts on world energy situation
Anton Kjelaas, Nansen Centre, Bergen, Norway
- 17:15 – 17:30 General discussion related to the lectures
- 17:30 – 18:00 Establishing student thematic groups for preparation of reports

1 July, Tuesday

Session: Hydrological cycle of the Arctic and Northern Eurasia in the warming climate

Chair: Dmitry Pozdnyakov

- 09:30 – 10:15 Current state and projections of hydrological cycle of land surface and atmosphere in the Northern Eurasia
Valentin Meleshko, Voeikov Main Geophysical Observatory, St. Petersburg, Russia
- 10:15 – 11:00 Atmospheric moisture budget in the Arctic and sub-Arctic
Timo Vihma, Finnish Meteorological Institute, Helsinki, Finland
- 11:00 – 11:30 **Coffee Break and student posters**
- 11:30 – 12:15 On-going changes of glaciers in Eurasian Arctic
Andrey Glazovsky, Institute of Geography RAS, Moscow, Russia
- 12:15– 13:00 On the upcoming use of Sentinel-1 for land hydrology and cryosphere of the Arctic and Northern Eurasia
Nicolas Longepe, CLS, Toulouse, France
- 13:00 – 13:30 General discussion related to the lectures
- 13:30 – 14:30 **Lunch**

Student Session (12 min talk+ 3 min questions = 15 min each student presentation)

Chairs: Lasse Petterson and Alla Yurova

- 14:30 – 16:00 Presentations (1-6)
- 16:00 – 16:30 **Coffee Break and student posters**
- 16:30 – 18:00 Presentations (7-12)

2 July, Wednesday

Student Session – continuation (12 min talk+ 3 min questions = 15 min each student presentation)

Chairs: Lasse Pettersson and Alla Yurova

- 09:30 – 11:00 Presentations (13-18)
- 11:00 – 11:30 **Coffee Break and student posters**
- 11:30 – 13:00 Presentations (19-23)
- 13:00 – 14:00 **Lunch**
- 14:00 – 16:30 Preparation of student's reports

City tour

- 16:30 – 17:00 From Repino to City Centre by bus
- 17:00 – 19:00 St. Petersburg sightseeing with the bus
- 19:00 – 21:00 Boat trip along the Neva River and canals with a buffet dinner
- 21:00 – 23:00 Walk and pubs
- 23:00 – 23:30 Return to Repino by bus

3 July, Thursday

- 10:00 – 11:00 Preparation of student's reports
- 11:00 – 11:30 **Coffee Break and student posters**

Session: Ice seasons and ecology in lakes and rivers in a changing climate

Chair: Timo Vihma

- 11:30 – 12:15 Physics of ice-covered lakes
Matti Leppäranta, University of Helsinki, Helsinki, Finland
- 12:15 – 13:00 Impact of climate change on freezing lakes
Matti Leppäranta, University of Helsinki, Helsinki, Finland
- 13:00 – 14:00 **Lunch**
- 14:00 – 14:45 Optical remote sensing: bringing evidence of a «hysteretic» nature of a large lake's coming from a mesotrophic state
Dmitry Pozdnyakov, Nansen Centre, St. Petersburg, Russia
- 14:45 – 15:15 Great Lakes of Europe – Ladoga and Onega: Modelling and observations
Nikolay Filatov, Northern Water Problems Institute, Petrozavodsk, Russia

- 15:15 – 16:00 General discussion related to the lectures
- 16:00 – 16:30 **Coffee Break and student posters**
- 16:30 – 21:00 Preparation of student's reports (with a break for a dinner)
- 16:30 – 21:00 **EuRuCAS Progress and Steering Committee Meetings** (with a break for a dinner)

4 July, Friday

Session: Terrestrial ecosystems, permafrost and greenhouse gases in the Northern Eurasia

Chair: Stein Sandven

- 09:30 – 10:15 The interaction of land processes in determining the high latitude carbon balance
Shaun Quegan, University of Sheffield, Sheffield, UK
- 10:15 – 11:00 Natural and human-affected complexity of the tundra landscape: ways to think regionally on the basis of local research and management
Alla Yurova, Nansen Centre, St. Petersburg, Russia
- 11:00 – 11:30 **Coffee Break and student posters**
- 11:30 – 12:15 Land surface monitoring and change detection in the Northern Eurasia from optical and radar satellites
Christiane Schmullius, Friedrich Schiller University, Jena, Germany
- 12:15 – 13:00 Current state and stability of polar lakes
Irina Fedorova, Arctic and Antarctic Research Institute/Otto Schmidt Laboratory for Polar and Marine Research, St. Petersburg, Russia
- 13:00 – 14:00 **Lunch**
- 14:00 – 14:45 Challenges of permafrost modelling under changing climatic conditions
Oleg Anisimov, State Hydrological Institute, St. Petersburg, Russia
- 14:45 – 15:30 Numerical modelling of greenhouse gases in boreal lakes
Victor Stepanenko, Moscow State University, Moscow, Russia
- 15:30 – 16:00 General discussion related to the lectures
- 16:00 – 16:30 **Coffee Break**
- 16:30 – 17:45 Presentation of student group's reports
- 17:45 – 18:00 Closing Summer School

5 July, Saturday

During day **Participant departures**