

**September 1<sup>st</sup>**

**8:30 Registration**

**9:00 Session 1. Modeling and analysis of atmosphere processes**

**Invited reports**

Kurbatsky A.F., Kurbatskaya L.I. Eddy mixing and Global Intermittency of Turbulence in the Environmental Flows of Regional Scale

Tolstykh M.A., Shashkin V.V., Yurova A. Yu. Recent developments of the global semi-Lagrangian atmospheric model

Iakovlev N.G., Golubeva E.N., Platov G.A. On the formulation of the large-scale Arctic Ocean water and sea ice modeling problem

Groisman P.Ya. and Lawford R.G. Northern Eurasia Earth Science Partnership Initiative (NEESPI) in the past two years

11:00 – 11:20 Refreshment

Frolkis V.A., Kokorin A.M. Assessment of the impact of different stratospheric aerosol models from volcanic origin on the Earth radiation-thermal regime

**Lecture**

Zuev V.V. Tropical volcanoes, global ozone depletion, and climate change

*12:50 – 14:00 Lunch*

*NEESPI Workshop Organizing Intermezzo: Breakout into groups; tasks to groups. We envision at least 3 work groups devoted to (a) carbon cycle, (b) energy and water cycle, and (c) socio-economic impact of the ongoing and projected changes.)*

**Oral reports**

Penenko A.V. Multidimensional variational data assimilation algorithm for convection-diffusion models

Konstantinov P.I., Varentsaov M.I., Samsonov T.E. New approaches for thermal exchange processes simulation in Moscow's atmospheric boundary layer

**15:30 — 15:50 Refreshment**

**15:50 Reports of Young Scientists' School participants**

*16:30 Begin of the poster exhibition (since that moment, posters will stay during the entire period of Event)*

*16:30 Work in groups*

*19:00 Welcome reception*

## **September 2<sup>nd</sup>**

*9:00 Report of group conveners (30') Organization of mix groups for cross-cutting approach*

### **10:00 Session 2. Modeling and analysis of land surface state and its hydrological regime**

#### **Invited report**

Georgiadi A.G., Milyukova I.P., Kashutina E.A., Borodin O.O. River run-off in catchment basins of the largest rivers on south macrodecline of Russian plain in warm climatic epochs in the past, present and future

**11:00 — 11:20 Refreshment**

#### **Oral reports**

Zdorovenнова G., Zdorovennov R., Palshin N., Terzhevnik A. Water temperature, ice and albedo dynamics in a shallow ice-covered lake in spring

Dyukarev E.A., Gordov E.P., Dyukarev A.G., Autrey B., Lane C.R. Identification, characterization, and functional assessments of isolated wetlands

#### **Invites lectures**

Qianlai Zhuang Land-use and land-cover changes and their effects on carbon and water cycling in Northern Eurasia

**12:50- 14:00 Lunch**

Shiklomanov A.I., Prusevich A.A. Modeling hydrological processes across Northern Eurasia with a new Water Balance Model - Transport from Anthropogenic and Natural Systems (WBM-TrANS)

#### **Invited reports**

Olchev A. Application of a process-based Mixfor-SVAT model to estimate a sensitivity of net CO<sub>2</sub> exchange and evapotranspiration of boreal forests to climate changes

## **15:30 — 15:50 Refreshment**

Marchenko S., Wissler D., Romanovsky V., Chapman W., Froking S., Walsh J. E. Coupled Hydrological and Thermal Modeling of Permafrost and Active Layer Dynamics: Implications to Permafrost Carbon Pool in Northern Eurasia

## **16:20 Work in groups**

## **September 3<sup>rd</sup>**

### **9:00 Report of group conveners**

### **9:30 Session 3. Climate modeling and analysis**

#### **Invited reports**

1. Penenko V.V., Tsvetova E.A., Penenko A.V. Advanced variational modeling technologies for environmental studies
2. Perekhodtseva E.V. On the operative hydrodynamic-statistical forecast of summer storm winds and heavy precipitation over the northwest Russia including territory of Karelia
3. Ailikun. MAIRS Review

## **11:00 – 11:20 Refreshment**

#### **Oral reports**

1. Moraru E.I., Loginov S.V., Ippolitov I.I. Variability of trends of ocean surface temperature, heat fluxes and effective radiation in Northern Atlantic over 1975-2011 global warming period.
2. Ushakov K., Ibrayev R. Simulation of the World Ocean climate by means of the INM – IO RAS numerical model.

#### **Lectures**

1. Andrei Sokolov, Erwan Monier, Adam Schlosser, Jeff Scott and Xiang Gao. Studying different sources of uncertainty in the projection of the future climate change over Northern Eurasia.

## **12:50 – 14:00 Lunch**

2. Larissa Nazarenko, Nick Tausnev, and Gavin Schmidt. Simulation of the Present and Future Climate Change with the GISS ModelE2

#### **Oral reports**

1. Borzenkova A.V., Shmakin A.B. Changes of climatological conditions of automobile transport functioning in north of European part of Russia
2. Shulgina T.M., Gordov E.P. Temperature and precipitation extreme changes in Siberia

3. Shtabkin Yu. A., Moiseenko K. B. Seasonal variations of CO and NO<sub>x</sub> near-surface concentrations in central Siberia: observations and model simulations

**15:45 – 16:05 Refreshment**

## **Session 4. Data and information-computational systems for Earth System Sciences**

### **Invited report**

1. Maksyutov S., Oda T., Saito M., Valsala V. K., Belikov D.A., Ito A. Integrated global carbon cycle modeling system for studies in atmospheric CO<sub>2</sub> data assimilation

### **Oral report**

1. Okladnikov I.G., Gordov E.P., Titov A.G., Bogomolov V. Yu., Martynova Yu. V., Shulgina T.M. Web-GIS application for analysis of georeferenced data

### **16:50 Round-table “Strategic Planning for the post-NEESPI period:**

- What has and what has not been accomplished
- A new suite of NEESPI Science Questions
- Organization of the large NEESPI Science Conference in 2015“

*17:50 Work in groups*

## **September 4<sup>th</sup>**

### **9:00 Session 4. Data and information-computational systems for Earth System Sciences**

#### **Oral report**

Okladnikov I.G., Gordov E.P., Titov A.G., Bogomolov V. Yu., Martynova Yu. V., Shulgina T.M. Web-GIS application for analysis of georeferenced data

### **9:15 Session 5. Mathematical methods in ecology**

#### **Oral reports**

Rettieva A.N. Bioresource management problems with asymmetric players

Smirnov N.V., Kirillov A.N. Mathematical modeling of nitrification and organic matter oxidation processes in the biological treatment system

Tyutyunov Yu., Kovalev O., Titova L., Berdnikov S. Spatial demo-genetic model for studying phenomena observed during introduction of the ragweed leaf beetle *Zygogramma suturalis* F. in the south of Russia

Kornikov V. (SpbU), Zhigljavsky A. (Cardiff University) Forecasting Earth temperature records using Singular spectrum Analysis

## **10:15 Short oral reports**

### ***Session 1. Modeling and analysis of atmosphere processes***

Monzikova A.K., Kudryavtsev V.N., and S.E. Larsen . Use of a planetary boundary layer model to estimate wind power potential of the Gulf of Finland

Vargin P.N., Peters Diter, Aksel G. Impact of extratropical Rossby wave trains on planetary wave activity in the polar southern lower stratosphere in September 2002

Martynova Yu.V., Zaripov R.B., Krupchatnikov V.N. Sensitivity of WRF ARW forecasts to choice of landuse maps

### ***Session 2. Modeling and analysis of land surface state and its hydrological regime***

Charles R. Lane, Hongxing Liu, Oleg Anenkhonov, Brad Autrey, and Victor Chepinoga. Using high-resolution multispectral WorldView-2 imagery and Indicator Species Analysis to map freshwater deltaic wetlands

### ***Session 3. Climate modeling and analysis***

Martynova Yu.V., Krupchatnikov V.N. The influence of anthropogenic climate forcing on some storm track characteristics in the Northern Hemisphere

Morozova P.A., Kislov A.V. Response of mounting glaciation to climate variations: stochastic approach

### ***Session 4. Data and information-computational systems for Earth System Sciences***

Arzhanova, N.M., O. N. Bulygina, V. N. Razuvaev. Roshydromet's specialized hydrometeorological datasets for climate monitoring and climate research

Kadochnikov A.A. Organization of access to observational data using web services for monitoring systems the state of the environment

Titov A.G., Gordov E.P., Okladnikov I.G. Architecture of integrated system of geospatial data services for climate research

## **11:00 – 11:20 Refreshment**

### ***Session 5. Mathematical methods in ecology***

Pridacha V.B., Sazonova T.A., Olchev A.V. Effects of environmental conditions on CO<sub>2</sub> / H<sub>2</sub>O exchange of *Betula* species in the taiga zone of North-West Russia

Kisternaya M.V., Kozlov, V.A., Leri M.M., and Pavlov Yu. L. Forecast of the emerge period of hadrobregmus pertinax (l.) – the pest of the historic timber structures

Pavlov Yu., Khvorostyanskaya E. Probabilistic model of host-parasite system

Ivashko A. A. Multistage Mate Choice Game with Age Preferences

**11:45 – 12:50 Poster session**

*12:50 – 14:00 Lunch*

**Session 6. Core environmental activities in Northern Eurasia**

Gutman G., Groisman P. The NASA LCLUC Program in Northern Eurasia: An Update

Gordov, E.P. Siberia Integrated Regional Study: the state of the art and projections

Krutikov, V.A. Arctic dimension of research at the Institute of Monitoring of Climatic and Ecological Systems (IMCES) of the Siberian Branch of RAS

**15:30 – 15:50 Refreshment**

Gordova Yu., Martynova Yu., Shulgina T., Titov A., Genina E., Gorbatenko V., Gordov E., Groisman P., Lykossov V. NEESPI/SIRS capacity building program: from CITES/ENVIROMIS YS conferences to continuous learning on the base of web-GIS platform “Climate”

**16:20 Report of group conveners.**

**17:00 Discussion of the documents about the present state of NEESPI and its future development**

*19:00 Conference Dinner*

**September 5<sup>th</sup>**

**10:00 Round-table discussion “Role of modeling in integrated assessment of contemporary and future environmental changes over Northern Eurasia”**

**10:40 – 11:00 Refreshments**

**11:00 Writing the papers (*EOS; draft of strategic plan for the post-NEESPI period in the northern half of the NEESPI domain*)**

*12:30 Closing of the conference*