

Preliminary program

Sessions will be held in Conference Hall of IMCES SB RAS, Akademichesky av., 10/3

June 28

9:00-10:00 Registration

10:00 Session 1. Ongoing Climate Changes over Northern Eurasia. Chair E.P. Gordov

Invited lectures

Volodin E.M.(INM RAS), Vargin P.N.(CAO)

Troposphere - stratosphere interaction in observations and climate modeling data at different time scales

11:00-11:30 Coffee-break

Gordov E.P. (IMCES SB RAS)

VRE for Northern Eurasia climatic studies

12:30-14:00 Lunch

14:00 *Invited report*

Krutikov V.A., Volkov Yu.V., Kuskov A.I., Tartakovsky V.A. (IMCES SB RAS)

New methods in the analysis of geophysical data

Oral reports

Blyakharchuk T.A. (IMCES SB RAS), Moskalenko N.G., Ponomareva O.E., Ustinova E.V., Berdnikov N.M., Gravis A.G. (ICE SB RAS)

Impact of climate changes on ecosystem dynamics in West Siberia northern taiga

Podnebesnykh N.V., Ippolitov I.I. (IMCES SB RAS)

Relation of long-term dynamics of atmospheric circulation parameters, in terms of cyclones, to surface air temperature over Siberia

Tartakovsky V. A., Kuskov A.I., Ivanova E.V. (IMCES SB RAS)

Observed changes in climate over the Great Vasyugan bog in the period of instrumental observations: air temperature

Kharyutkina E.V., Loginov S.V., Martynova Yu.V. (IMCES SB RAS)

Estimation of changes in energetic characteristics of atmospheric circulation and their relationship with climate of West Siberia during last decades

Zolotov S.Yu., Ippolitov I.I., Loginov S.V. (IMCES SB RAS)

Dynamics of the Northern and Southern Hemisphere subtropical jet streams for the period 1948–2013 from the NCEP-NCAR reanalysis

Moraru E.I., Loginov S.V., Ippolitov I.I. (IMCES SB RAS)

The temporal variability of the ocean and atmosphere characteristics over the North parts of the Pacific and Atlantic oceans for the period of the global warming from 1975 to 2011

16:00-16:30 Coffee-break

Shiryaeva A.V. (IG RAS)

Meteorological conditions of automobile transport operation in Moscow region in cold season

Short oral reports

Shulgina T.M., Gordov E.P. (IMCES SB RAS)

Temperature and precipitation changes in Siberia: data reliability and climate characteristic trends

Sapyan E.S., Filandysheva L.B. (TSU)

Annual dynamics features of the thermal regime of natural areas of the West Siberian plain

Shtabkin Yu. A., Moiseenko K.B. (IAPh RAS)

Seasonal variations of O₃, CO and NO_x near-surface concentration in central Siberia: ZOTTO observation and model simulation

Vasil'ev D.Yu., Mikhailov G.P. (USATU)

Instability of Earth's angular velocity and long-term fluctuations of the Belaya River discharge

Vasilenko O.V. (IG SB RAS), Voropay N.N. (IMCES SB RAS)

Monitoring of changes of the air temperature in the ridge and hollow landscapes

Utkuzova D.N., Khan V.M. (Hydrometeorological Center of RF)

Spatiotemporal characteristics of extremely wet and drought episodes in Russian Federation

Vlasov V.K. (IG SB RAS), Voropay N.N. (IMCES SB RAS)

Influence of vegetation on thermal regime of sandy soils

Korf E.D. (IMCES SB RAS)

Research of the dynamics of thermocarst lakes located in the central part of Chuya Basin

18:30 Welcome reception

June 29

9:00 Session 2. Regional climate modeling. Chair V. Krupchatnikov

Invited reports

Kurbatskiy A.F. (ITAM SB RAS, NSU), Kurbatskaya L.I. (ICMMG SB RAS)

Features of Turbulent Transport in Free Atmosphere

Kuzin V.I., Lapteva N.A. (ICMMG SB RAS)

Modeling of the Climatic River Runoff for the Siberian Region in the XX and XXI centuries

Golubeva E.N., Platov G.A. and Yakshina D.F. (ICMMG SB RAS)

Numerical simulation of the Arctic Ocean variability

Stepanenko V.M.^{1,2}, Glazunov A.V.^{1,3}, Guseva S.P.¹, Lykosov V.N.^{1,3}, Shurpali N.⁴, Biasi C.⁴, Martikainen P.⁴ (¹MSU, ²RCC, ³INM RAS, ⁴University of Eastern Finland)

Numerical simulation of greenhouse gases transport in a system “lake – atmospheric boundary layer”

11:00-11:30 Coffee-break

Belikov D.A.^{1,2,3}, Maksyutov S.², Takagi H.², Yoshida Y.², Ganshin A.⁴, Zhuravlev R.⁴, and Yokota T.² (¹NIPR, ²NIES, ³TSU, ⁴CAO)

Study of column-averaged CO₂ concentrations in the subarctic using GOSAT retrievals and NIES transport model simulations

Invited lectures

Krupchatnikov V.^{1,2,3}, Martynova Yu.^{1,3}, Borovko I.^{1,2} (¹SRHRI, ²ICMMG SB RAS, ³IMCES SB RAS)

The General Circulation of the Atmosphere and Climate Changes

13:00-14:00 Lunch

Lykosov V.N. (MSU, INM RAS)

Supercomputer simulation of multi-scale interaction between atmospheric boundary layer and hydrologically inhomogeneous underlying surface

Oral reports

Antokhina O.Yu., Antokhin P.N., Belan B.D. (IAO SB RAS), Kochetkova O.S. (ISTP SB RAS)
Investigation of jet streams and the tropopause folds in Western Siberia based on ECMWF ERA-Interim

Verezemskaya P.S. (MSU), Stepanenko V.M. (MSU, RCC)

Numerical modeling of polar lows using WRF model

Yudin M.S. (ICMMG SB RAS) Atmospheric front dynamics over steep orography: finite element model

Fadeev R.Yu. (INM RAS)

Numerical simulations of orographic gravity waves

16:00-16:30 Coffee-break

Kochetkova O.S., Devyatova E.V., Tatarnikov A.V., Mordvinov V.I., Shcheglova E.S. (ISTP SB RAS)

Comparison of the temperature fields obtained from satellite probing and ERA-Interim data for geopotential height 10 hPa in wintertime over Siberia

Short oral reports

Chavro A.I. (INM RAS), Dementev A.O. (MPTI), Stepanenko V.M. (MSU)
Dynamic-statistical model of the troposphere for Western Siberia

Popkova M.I. (SFU)
Seasonal growth and structure of the tree rings

Tychkov I.I. (SFU)
VS-oscilloscope – new algorithm of parameterization of process-based tree-ring model

Morozova P.A. (IG RAS)
Impact of climate change on the mass balance of glaciers in the Caucasus . Mass-balance model of mountain glaciers

Rudneva M.A., Mordvinov V.I., Kochetkova O.S. (ISTP SB RAS)
Relationship between sudden stratospheric warming and disturbances propagating from the tropics

17:10 Session 3. Northern Eurasia climate and biosphere interrelations. Chair E.A. Dyukarev

Invited lecture

Zuev V.V. (IMCES SB RAS)
Influence of black carbon on environmental processes in Siberia and Arctic

June 30

9:00 Session 1. Ongoing Climate Changes over Northern Eurasia. Chair E.P. Gordov

Invited lecture

Reik V. Donner (Potsdam Institute for Climate Impact Research)
Dynamical aspects of extremes in climate and ecosystems: Assessing trends, spatial coherence and mutual interdependence

10:00 Session 3. Northern Eurasia climate and biosphere interrelations. Chair E.A. Dyukarev

Oral reports

Dyukarev E.A. (IMCES SB RAS)
Separating soil respiration and photosynthetic assimilation components in CO₂ flux automatic chamber measurements

Bocharov A.Yu., Savchuk D.A., Dirks M.N. (IMCES SB RAS)

Siberian larch in high elevation forests and on moraine in the Yuzhno-Chuisky Range (the Central Altai Mountains)

Filimonova E.O., Savchuk D.A. (IMCES SB RAS)

Seed cone production in Siberian stone pine in high elevation forests and forest-tundra ecotone in Severo-Chuisky Range (the Central Altai Mountains)

Preis Yu.I. (IMCES SB RAS)

Response of Baraba forest-steppe mires to global cooling of Holocene

11:00-11:30 Coffee-break

Sapozhnikova V.A., Ageev B.G., Ponomarev Yu.N. (IAO SB RAS), Savchuk D.A. (IMCES SB RAS)

Environment and some features of 300-year-old larch

Smirnov S.V.¹, Batranin A.V.², Bondarenko S.L.¹, Stuchebrov S.G.² (¹IMCES SB RAS, ²TPU)
Analysis of biologically active solar radiation impact on density of annual rings of conifers

Bryukhanova M.V. (IF SB RAS), Shishov V.V., Tychkov I.I. (SFU)

Modeling of radial growth of white birch growing on permafrost

Short oral reports

Timoshok E.N. (IMCES SB RAS)

The model of the dynamics of the ecological factors at the Maly Aktru glacier foreland (Severo-Chuisky range)

Rayskaya Yu. G. (State Natural Reserve “Tungusky”)

The monitoring of the structure of local population of *Cypripedium* genera orchids at the State Natural Reserve ‘Tungusskiy’

Genina E.Yu., Gordov E.P., Goroshkevich S.N., Zhuk E. (IMCES SB RAS)

Spatial distribution of index of continentality within Siberian stone pine growing area

12:30 – 14:00 Lunch

14:00 Session 4. Influence of Northern Eurasia terrestrial ecosystems on global biogeochemical cycles: past, present and future. Chair S.N. Kirpotin

Invited reports

Panov A.V.¹, Chi X.², Prokushkin A. S.¹, Bryukhanov A.V.¹, Korets M.¹, Ponomarev E.I.¹, Bryukhanova M.V.¹, Timokhina A.V.¹, Krivobokov L.V.¹, Sidenko N.V.¹, Andreae M. O.², and M. Heimann³ (¹IF SB RAS, ²Max-Planck-Institute for Chemistry, ³Max-Planck-Institute for Biogeochemistry)

Complex studying of wildfire influence on atmospheric composition and carbon uptake of forest ecosystems in central siberia: the establishing of a long-term post-fire monitoring system

Barrett K.¹, Kukavskaya E.², Kasischke E.³ (¹University of Leicester, ² IF SB RAS, ³ University of Maryland)

Detection of Post-fire Recruitment Failure in the Boreal Forest Using Remotely Sensed Data

Zavalishin N.N. (IAPh RAS)

Modeling the biotic turnover in ecosystems of permafrost regions of the Northern Eurasia under climate change

Korzh V.D. (IO RAS)

General Laws of Chemical Elements Composition Dynamics in the Hydrosphere

16:00-16:30 Coffee-break

Oral reports

Golubyatnikov L.L., Kazantsev V.S. (IAPh RAS)

Climate change impact on the methane emission from northern ecosystems in Western Siberia

Kharanzhevskaya Yu.A., Sinyutkina A.A. (Siberian Research Institute of Agriculture and Peat)

Influence of watershed boggyiness on long-term mean river runoff of middle Ob' basin

Short oral reports

Nikonova L.G., Golovatskaya E.A. (IMCES SB RAS)

The rate of decomposition of plant residues in the oligotrophic bogs

17:05 – 18:00 Poster session (reports from sessions 1-4)

July 1

9:00-19:00 Practical session

July 2

9:00 Session 5. Air pollution transport and climate change. Chair V.V. Penenko

Invited report

Penenko V.V., Tsvetova E.A. (ICMMG SB RAS)

Direct and inverse problems based on the models of dynamics and chemistry of the atmosphere

Oral reports

Pyanova E.A. (ICCMG SB RAS), Faleychik L.M. (INREC SB RAS)

Atmospheric pollution transport in the Baikal region:

numerical modeling scenarios

Lyapina E.E.^{1,2}, Filiminenko E.A.¹, Talovskaya A.V.¹, Osipova N.A.¹ (¹TPU, ²IMCES SB RAS)
Comparison of ionic structure of snow cover in the influence zone of Tomsk industrial enterprises

Veretennikova E.E., Lyapina E.E. (IMCES SB RAS)
Lead and mercury in the peat cores of ridge-hollow complex in West Siberia

Konstantinov P.I., Kukanova E.A. (MSU)
Urban heat islands in Russian Federation: the main characteristic and problems in their study

Kilanova N.V., Klimova E.G. (ICT SB RAS)
Data assimilation technique in the problem of assessment the atmospheric greenhouse gases concentration

Short oral reports

Tsaruk V.V.¹, Belan B.D.², Kozlov A.V.², Simonenkov D.V.², Tolmachev G.N.² (¹TUCSR, ²IAO SB RAS)
The influence of the megalopolis on aerosol composition of the lower atmosphere derived from aircraft sounding

11:05 – 11:30 Coffee-break

11:30 Session 6. Observational and ICT infrastructure support of regional scale environmental studies. Chairs V.A. Krutikov and M.V. Kabanov

Invited reports

Dmitriev E.V.¹, Kozoderov V.V.², Sokolov A.A.³ (¹INM RAS, ²MSU, ³Université du Littoral Côte d'Opale)
Classification of species and age composition of forest stands from hyperspectral airborne remote sensing data

Yakubailik O. E. (ICM SB RAS)
Web mapping applications and geoportals as a basis of modern software technologies and tools for environmental monitoring problems

Session 1. Ongoing Climate Changes over Northern Eurasia

Invited report

Groisman P.Ya.¹, Bogdanova E.G.², Alexeev V.A.³, and Bulygina O.N.⁴ (¹University Corporation for Atmospheric Research at NOAA National Climatic Data Center, ²Voeikov Main Geophysical Observatory, ³International Arctic Research Center, University of Alaska-Fairbanks, ⁴All-Russia Institute for Hydrometeorological Information)
Contemporary climatic changes in northern eurasia and their interactions within-situ measurement deficiencies affect both, climatology of precipitation and its trends

13:00 -14:00 Lunch

14:00 Session 6. Observational and ICT infrastructure support of regional scale environmental studies

Oral reports

Kharuk V.I.¹, Pestunov I.A.², Dubrovskaya O.A.², Melnikov P.V.², Rylov S.A.² (¹IF SB RAS, ²ICT SB RAS)

Detection and classification of Siberian pine stands decline and mortality based on high spatial resolution satellite data

Voronina Yu.1, Lavrentiev N.1, Privezentsev V.1, FAZliev A.1, Firsov K.2 (¹IAO SB RAS, ²VSU)

Database on absorption cross sections of atmospheric molecules

Ushakov K.V., Ibrayev R.A. (IO RAS)

Simulation of the World Ocean climate thermohaline structure by the INM – IO RAS numerical model

Klimova E.G. (ICT SB RAS)

Modern environmental data assimilation technologies based on the dynamic-stochastic approach

Smirnov S.S., Geiko P.P. (IMCES SB RAS, TSU)

The detection of atmospheric trace gas species by gas-analyzer based on Xe lamp

Malyshkov S.Yu., Gordeev V.F., Malyshkov Yu.P., Polivach V.I. (IMCES SB RAS)

Application of ENPEMF method to engineering, geocryological studies and soil dynamics monitoring

Kurianovich X.V.¹, Astafurov V.G.^{1,2}, Skorokhodov A.V.¹ (¹IAO SB RAS, ²TUCSR)

Statistical model of cloudiness imagery texture by MODIS data

Bryukhanov A.V.¹, Panov A.V.¹, Kalyakin S.V.², Guziy V.M.², Sidenko N.V.¹ (¹IF SB RAS, ²«Vostsiblesproject» Department of FSUE «Roslesinfor» Krasnoyarsk)

High-precision laser-based instrumentation systems as a tool for assessment of post-fire effects on fresh burnt areas in Central Siberia

16:00-16:30 Coffee-break

N.V. Sidenko¹, O. Kolle², A.V. Panov¹, M. Heimann² (¹IL SB RAS, ²Max-Planck-Institute for Biogeochemistry)

Instrumental monitoring of climatic parameters at the «ZOTTO» observatory in the middle taiga subzone of Central Siberia

Short oral reports

Voropay N.N.¹, Cherkashina A.A.², Kurakov S.A.¹ (IMCES SB RAS, IG SB RAS) Use of temperature recorders to explore soils hydrothermal regime across the Tunkinskaya hollow

Kadochnikov A.A. (ICM SB RAS)

Development of integrated geographic information web services for environmental research

Sklyadneva T.K., Kozlov A.V., Davydov D.K., Fofonov A.V, Rasskazchikova T.M. (IOA SB RAS)

Database of environmental information

Zolotov S.Yu., Zuev S.V. (IMCES SB RAS)

Total cloudiness estimation using unshaded pyranometer

Zuev S.V., Krasnenko N.P., Kartashova E.S., Barmin V.V. (IMCES SB RAS)

Using unshaded pyranometer for measuring solar radiation components in the automatic mode

Lapina L.E. (Department of mathematics Komi SC UrD RAS), Mikhaylov O.A. (Institute of Biology Komi SC UrD RAS)

The diurnal variation of carbon dioxide, methane, water vapor and air temperature in the mezoooligotrophic peatland

Sinyutkina A.A. (Siberian Research Institute of Agriculture and Peat)

Determination of the formation factors of spatial differentiation of wetlands using geoinformation analysis

Yankovich E.P., Baranovskiy N.V. (TPU)

GIS-based assessment of probability of forest fire caused by focused sunlight

Gordov E.P., Okladnikov I.G., Titov A.G., Shulgina T.M. (IMCES SB RAS)

Development of integrated system of geospatial data services for climate research

17:30 – 18:30 Poster session (reports from sessions 5-6)

July 3

9:00 Lectures

Belan B.D. (IAO SB ARS) Tropospheric ozone

10:30 – 11:00 Coffee-break

Fadeev R.Yu. (INM RAS) Mathematical modeling in geophysical hydrodynamics

12:30 – 14:00 Lunch

Pozdnyakov A.V. (IMCES SB RAS) Geosystem self-organization

15:30 – 16:00 Coffee-break

Gorbatenko V.P. (TSU) Hazardous convective phenomena in West Siberia atmosphere: diagnostic and forecast problems

July 4

10:00 – 13:00 NEESPI/SIRS Workshop and Round-table: “Future Earth” Program and Northern Eurasia region

Conveners: P. Groisman and E. Gordov

Introductory comments - P. Groisman and E. Gordov “NEESPI, Future Northern Asia and Future Earth”

Discussion of current and future Northern Eurasia projects:

Dr. of Sci. (Biology) Kirpotin S.N. (TSU)

Director of RIBB TSU, Cand. of Sci. (Biology) Vorobiev S.N.

Director of IMCES SB RAS, Dr. of Sci. (Phys.&Math.) Krutikov V.A.

RAS Counsellor, RAS Corr. Member Kabanov M.V.

Conference participants

Concluding discussions

12:30 Close of Conference

13:00 – 14:00 Lunch

18:00 Conference dinner