International Conference Program

20 July, Friday
9:00 Practical Session and boat trip
Invited lecture
  1. Shvartsev S.L.
  Tom river water composition and quality

July 21, Saturday
8:30-9:30 Registration
(IMCES Conference Hall)
9:30 -10:00 Conference opening
1. APN Workshop on Atmospheric Composition and Air Quality
   Chairs Prof. H. Akimoto (Japan) and Prof. E. Gordov (Russia) (IMCES Conference Hall)
10:00-15:45 Session 1.1.
Atmospheric Composition and Air Quality Measurements
(Chair Hajime Akimoto)
Invited lectures
  1. Akimoto H.
  Tropospheric ozone and its impact on climate and environment
  11:00-11:30 Coffee break
  2. Zuev V.V.
  Laser gas analysis of the atmosphere: history of development and prospects
Invited reports
  1. Kanaya Yu.
  Chemistry of tropospheric OH and HO2 radicals: current understanding and questions
  13:00-14:30 Lunch
  2. Raputa V.F.
  Models of reconstruction regional pollution on the observed data
  3. Takigawa M., Niwano M., Akimoto H.,
  Takahashi M.
  Model calculation of tropospheric ozone distribution
  Oral report
  1. Irie H.
  Synergistic use of satellite and ground-based observations to understand air quality issues
  15:45-16:15 Coffee break
  16:15-18:00 Poster presentations
  (IMCES Conference Hall)
Session 1.1.
  1. Dementeva A.L., Zhamsueva G.S., Zayahanov A.S., Tsydypov V.V., Ayurzhanaev A.A.
  Research of particularities of circulation and processes of air mass in East Gobi
  2. Devyatova A., Saeva O.P.
  Dust and aerosol pollution from stationary mancaused sources in Novosibirsk city
  3. Goryaeva V.S., Tolkacheva G.A.
  Role of atmospheric precipitations as ecological indicators in the monitoring of the environment conditions of the urbanized territories in the arid zones
4. Lyapina E.E., Golovatskaya E.A.
Near surface concentration of mercury in Tomsk

5. Melnikova V.N., Shulgina T.M., Titov A.G.
Statistical analysis of meteorological data of NCEP/NCAR Reanalysis 1 and Reanalysis 2 for West Siberia

6. Panteeva N., Tolkacheva G., Rakhatova N.
Comparative analysis of long-term variations of Total Column Ozone in Uzbekistan by using ground and satellite data (TOMS)

7. Rakhatova N., Tolkacheva G., Panteeva N., Starovatov O.
Spatial-temporal variability of Total Column Ozone over Uzbekistan by using ground and satellite (TOMS) data

8. Raputa V.F., Smolyakov B.S., Shuvaeva O.V.
Assessment of volumes of torch burning attendant oil gas by surface monitoring data

9. Talovskaya A.V., Yazikov E.G.
Geochemical composition of dust aerosols within ground “Tomsky” in Tomsk region

18:00- 20:00 Open initial project meeting of APN CAPaBLE project CBA2007-08NSY
“Capacity Building to Study Interrelations between Atmospheric Composition, Anthropogenic Load and Climate Change in Northern Asia” (SCERT Seminar Hall)

22 July, Sunday

9:00-15:00 Session 1.2.
Atmospheric Composition and Air Quality Modeling
(Chairs Alexander Baklanov and Vladimir Penenko)

Invited lecture
1. Kurbatsky A.F., Kurbatskaya L.I.
Thermally driven mesoscale circulation over urbanized areas

Invited reports
1. Starchenko A.V.
Parallel computation for weather research and environment protection

2. Baklanov A.
Integrated systems: on-line and off-line coupling of meteorological and atmospheric chemical transport models

11:00-11:30 Coffee break

3. Aloyan A.E., Arutyunyan V.O., Yermakov A.N.
Modeling the dynamics and kinetics of gaseous pollutants and aerosols in the atmosphere: estimation of the environmental impact of forest fires

4. Penenko V.V.
Discrete-analytical approximations based on global and local adjoint problems for atmosphere, ocean and environment studies

Oral reports
1. Semenov V., Sorokovikova O., Fokin A.
Modeling of contaminant transport in a megapolis

2. Yudin M.S.
Orographic retardation of a cold atmospheric front near a lake

13:00-14:30 Lunch

3. Lezhenin A.A., Shlychkov V.A., Mal’bakhov V.M.
Numerical model study of atmospheric pollutant transport over a rough terrain
4. Klimova E.G.
Data assimilation algorithms based on the dynamical-stochastic approach
15:00-17:45 Session 1.3.
Environmental Data Resources and Information Systems
(Chairs Evgeny Gordov, Alexander Fazliev, Edige Zakarin and Galina Tolkacheva)
Invited reports
Risk mapping of adverse environmental impact on biota of North – West Caspian Sea region
Role of ecological indicators and GIS-technologies in the complex assessment of ecological conditions of the industrial agglomerations
3. Serebrjakov V.A., Vershinin A.V.
Distributed interoperable processing in GIS
16:30-17:00 Coffee break
Global and regional models in the informationalcomputational system “Climate”
Oral reports
Mesoscale model of atmospheric dispersion of contamination under temperature and topography inhomogeneity of landscape and its usage in DSS for nuclear accidents NOSTRADAMUS
17:45-19:30 Poster presentations
Session 1.2
(IMCES Conference Hall)
1. Balakay L., Tusseyeva N.
Analysis of distant carrying of pollutants from Kazakhstan territory
2. Baranovskiy N.V.
Parallel computing technologies and mathematical modelling of natural fires spread
3. Belikov D.
Model of atmospheric chemistry for air pollution analysis in the city
4. Hamal K., Bun R.
Spatial modeling of greenhouse gas emissions in energy sector on regional level
5. Dubickay B.S., Fomin S.P
Atmospheric composition changes simulation after detonation of Solid Rocket Motors. The algorithms for solving the negative influence problem
6. Gritsan E.V.
Assessment on simulation of the different precipitation classes by a regional hydrodynamic model for application to analysis of atmospheric pollution transport over the East Asian region
Using a regional non-hydrostatic model for calculation of meteorological data for the purpose of radionuclide distribution and deposition forecasts over the Kola Peninsula region
8. Ivanova E.V., Kazakov A.L.
Test of the one-dimensional model as to reproduce the seasonal structure of the atmospheric boundary layer over water surface
9. Khamidullin I.R., Bayanov I.M.
Numerical modeling of dynamics of propane escape accompanied by burning in the atmospheric surface layer
10. Kilanova N., Klimova E.
Suboptimal data assimilation algorithms for an estimation of passive pollutions concentration

11. Konstantinov P.I., Rubinstein K.G.
   Research of quality of the description a three-dimensional Moscow region- temperature mode by means of mesoscale model MM5

12. Konstantinov P.I., Kislov A.V.
   Simulation of summer temperature regime of Moscow region

13. Nochvay V.I., Beyko I.V.
   Urban emission parameters control in model of calculation of surface ozone pollution

   Development and evaluation of microscale meteorological model for air flow and pollution transport investigation in urban canopy

15. Panasenko E.A., Starchenko A.V.
   Numerical solution of some problems of impurity distribution in the atmosphere

16. Penenko A.V.
   Pollutant sources identification with the use of variational technique

17. Pyanova E.A.
   Numerical study of water body effect on spreading passive admixture from the point source

18. Ushakov K.V.
   Explicit difference schemes with variable time-steps in large-eddy simulation

   Radiant heat exchange modeling for determination of the thermodynamic parameters of the inhomogeneous gas mixtures

20. Vrazhnov D.A., Starchenko A.V.
   Parallel realization of high order schemes for solving problems of gas-disperse cloud transport and particles sedimentation

21. Tridvornov A.A.
   Estimation of man-caused and complex risks of emergencies for Krasnoyarsk Krai territory

Session 1.3
(SCERT Seminar Hall)

   Information-computational system for the study of homogeneous boundary layer over Tomsk

2. Boichenko I.V., Kataev M.Yu., Petrov A.I.
   Distributed informational system for lidar data processing

3. Bun A., Matthias J.
   Russia and Ukraine as potential participants in greenhouse gas market: tendencies and prognosis

4. Dyakonov I.
   Informational analytic system GeoMETA

5. Glagolev V., Kogan R.
   Elaboration of modules for territorial pollutions spatial analysis on basis of geoinformation systems overlay operations

6. Kataev M.Yu., Chugunov A.G.
   Computing features of the slope/aspect ratio according to base SRTM

   Geophysical computing system for solving of the tasks of the atmosphere monitoring from space

   Spatial interpolation of the meteoparameters according to the NCEP database

9. Mirkarimova B.M.
   Development of the complex model of ecological system dynamics for Northeast Caspian Sea
10. Okladnikov I.G., Titov A.G., Melnikova V.N., Shulgina T.M.
Web-system for processing and visualization of meteorological and climatic data
Information resources formation for the atmospheric spectroscopy
12. Rykova V.V.
Electronic resources of SPSTL SB RAS’ own generation as the information base of atmospheric and environmental researches
13. Pyankov S.V., Shavrina Yu.N., Shvalov V.N.
Website «The dangerous natural phenomena of the Perm krai»
Interactive system for data analysis (ISAD) for FEB RAS CCU in laser researches (LR) of environment
15. Timofeev A.A.
Global aerological datasets descriptive information presentation on the Internet
16. Titov A.G., Belikov D.A.
Web-system for Tomsk air quality assessment based on the pollution transport and transformation mathematical model
17. Tusseyeva N., Dedova T., Abdrahmanova N.
Development of GIS technologies of dust storms monitoring and modeling

July 23, Monday
2. Workshop on Climate Change Assessment and Modeling
Chairs Prof. M. Kabanov and Prof. V. Lykosov (Russia) (IMCES Conference Hall)
9:00-16:45 Session 2.1.
Physics of Climate (Chair Vasily Lykosov)
Invited reports
1. Lykosov V.N.
Mathematical modeling climate and climate change: regional aspects
2. Tolstykh A.M.
Modeling of regional atmosphere circulation with the help of a high-resolution hydrodynamic model
3. Krupchatnikoff V.N.
Transport and mixing in two-dimension atmospheric flow on beta-plane
4. Sterin A.M.
Estimating trends in climate time series: effect of statistical techniques on the resultant conclusions
11:00-11:30 Coffee break
5. KuzinV.I.
To the question of the ocean climate study
Oral reports
1. Rubinstein K., Egorova E.
Experiments with special surface characteristics of a megapolis area by the model of General Circulation of Atmosphere Hydrometcentre of Russia
2. Chavro A.I., Nogotkov I.V., Dmitriev E.V.
Statistical model for reconstructing small-scale fields of extreme temperatures in Moscow region
3. Dmitriev E.V.
Reconstruction of the mean European temperature over the past 600 years using the proxy data
4. Kostrykin S.V.
Choosing and implementation of the new advection scheme in the wave model WAM-4
13:00-14:30 Lunch
5. Esau I.
Convective feedback in climate change

Parameterization of the light absorption by components of sea water in the Black sea coastal zone

7. Protasov A.V.
Method of computation of spatio-temporal functions of primary factors on the basis of climatic ensembles of realizations of fields of meteorological elements

Phytoplankton communities in Earth’s climate system

16:30-17:00 Coffee break

Numerical modeling of the Arctic Ocean and Siberian shelf: problems and approaches

10. Stepanenko V.M., Mikushin D.N.
Numerical modeling of mezoscale dynamics of atmosphere above hydrologically heterogeneous surface

11. Krupchatnikoff V., Borovko I.
Modelling of coupling of the troposphere and stratosphere circulation

16:45- 18:45 Poster presentations
(IMCES Conference Hall)

Session 2.1

1. Bogoslovskii N., Shlyaeva A., Tolstykh M.
Data assimilation of surface and soil variables in the global semi-Lagrangian NWP model

2. Fadeev R.Yu., Tolstykh M.A.
Two-dimensional non-hydrostatic dynamical core for the model of atmosphere

3. Grankina T.B.
Mathematical modeling of the ice-thermal regime of water body

4. Kochetkov E.L.
Numerical modelling of 3-dimensional channel flows with a free surface

5. Nogotkov I.V., Dmitriev E.V.
On the influence of missing values in observational data on accuracy and stability of the retrieval of regional meteorological fields

6. Novikova I.V.
Improvement of dynamic downscaling of wind and sea level pressure forecasts over the Baltic sea region using MM5 model

7. Palamarchuk Y., Ivanov S.
Systematic errors of parameterization schemes in the MM5 model

8. Rodimova O.B., Bogdanova Yu.V.
On thermodynamic behaviour of the coefficients of expansion of the radiation characteristics into series of exponents

9. Shlyaeva A., Tolstykh M.A.
Finite-element scheme for the vertical discretization of the global semi-lagrangian forecast model

Session 2.2

1. Dyukarev E.A., Artyomova E.P.
Estimation of Western Siberia climate variability on different time scales

2. Badashova L.F., Murkina E.A., Khokhlova A.V.
Long-term variation of sea ice extent in Arctic Seas on satellite observations

3. Kharyutkina E.V., Loginov S.V.
Estimates of energetic balance components of cyclones on the Siberian region by reanalysis data NCEP/NCAR

4. Martynova Yu.V.
Estimation of influence of a variation of vegetation of northern hemisphere on dynamics of temperature and humidity during 21 century

5. Shishlov V.I.
Features and tendencies of climatic changes in northern regions of Eurasia

6. Zoloeva M., Rubinstein K.
Variability of the physical properties of the snow cover for general circulation model of atmosphere validation

7. Zolotov S.Yu., Ippolitov I.I., Loginov S.V.
Forecast estimations of change of temperature of ground air with use of a method of wavelet-transformation

July 24, Tuesday
9:00-12:00 Session 2.2.
Regional Climate Change Assessment
(Chair Michael Kabanov)
Invited reports
1. Polishchuk Yu.M., Dneprovskaya V.P., Bryksina N.A.
Study of warming influence on permafrost state in Western Siberia using space images

2. Begni G., Makhtar-Schuster M., Escadafal R., Fontannaz D.
European DesertNet (E-DN): a new structure to strengthen research about desertification in Europe, including a wider and wiser use of remote sensing technology

3. Azizov A.A., Petrov Yu.V., Skripnikova L.E.
Approaches to climate change evaluating in cities of Uzbekistan

4. Penenko V.V., Tsvetova E.A.
Generalized quantitative description of climate dynamics for goals of environmental design and ecological risk assessment

11:00-11:30 Coffee break
Oral reports
1. Podnebesnykh N.V., Ippolitov I.I., Gorbatenko V.P.
Dynamic characteristics of cyclonic and anticyclonic activity above the Western Siberia

3. Workshop on Siberia Integrated Regional Study (SIRS) chaired by Dr. G. Begni (France), Prof. E. Gordov (Russia), Prof. M. Heimann (Germany), RAS corr. member M. Kabanov (Russia), RAS corr. member V. Lykosov (Russia), Prof. A. Shvidenko (Austria) and Ac. E. Vaganov (Russia) (IMCES Conference Hall)

11:45-15:15 Session 3.1.
Development of SIRS information-computational infrastructure
(Chair Evgeny Gordov)
Invited reports
1. Gordov E.P.
State of the art of SIRS

2. Gordov E.P., Fedotov A.M., Kolchanov N.A.
Development of Information-computational SIRS Infrastructure: SB RAS input

3. Begni G., Ulte-Guerard P., Leroy M.
Earth observation French space policy and its potential use in the SIRS project

13:15-14:30 Lunch
Oral reports
1. Melnikov Yu.B.
Approaches to shaping the mechanism of the a priori determination non-account factors of the risk
2. Pyanova E. A., Faleychik A. A., Faleychik L. M.
Estimation of region of artificial reservoir effect on microclimate using a mathematical model and GIS technologies
15:15-18:15 Session 3.2.
Siberia Environment Dynamics in context of global and Northern Eurasia changes
(Chairs Michael Kabanov and Alexander Onuchin)
Invited lecture
Global change in Siberia: realities and expectations
16:15-16:45 Coffee break
Invited reports
1. Heimann M.
Monitoring biogeochemically driven atmospheric greenhouse gases over Eurasia
Dynamics of natural processes at Great Vasyugan Bog
Oral reports
Modeling of carbon balance of southern taiga peatland ecosystems at various scenarios of climate change
2. Preis Yu.I., Antropova N.A., Sharapova N.A.
Regional features of the mire formation in the forest zone of Western Siberia
18:15-19:30 Poster presentations
(IMCES Conference Hall)
Session 3.1
1. Melnikov B.N., Melnikov Yu.B.
Model of the firm development territory as base of the forecasting and analysis of the manifestation risk
Long-term variations of snow cover extent and duration over the territory of Western Siberia on satellite observations
Questions of deciphering multispectral based on the method of principal component analysis
Session 3.2
1. Dneprovskaya V.P.
Analysis of geobotanic structure of West-Siberian taiga zone in depend of climatic state indices
2. Dubrovskaya O., Klimage E.
Description of distribution of smoke aerosols from forest fires in territory of Siberia
3. Sorokovenko O., Preis Yu. I.
Stratigraphy and dynamics ridge-hollow complexes of Iksinskoe bog (Southern taiga of Western Siberia)
20:00 Conference Dinner
(Scientists House)

July 25, Wednesday
9:00- 13:00 4. Workshop on Man-made Environmental Risks in Siberia
Chairs Prof. A. Baklanov (Denmark) and Prof. E. Gordov (Russia)
(IMCES Conference Hall)

Invited review papers
2. Penenko V., Baklanov A. Atmospheric pollution and risks (thematic group results/findings)
3. Heimann M. Biogeochemical interactions and climate change feedbacks in the permafrost regions (thematic group results/findings)
4. Lykosov V. Climate/Global change (thematic group results/findings)
5. Kabanov M., Shvidenko A. Terrestrial ecosystems and hydrology (thematic group results/findings)
6. Gordov E., Zakarin E.
Information systems, integration and synthesis (thematic group results/findings)

Oral reports
Evaluation of doses, risks, vulnerabilities, and consequences for population and environment employing GIS analysis
2. Penenko V.V.
Atmospheric quality: from risk assessment to sustainable development
Approaches to evaluation of source-receptor relationship for atmospheric pollutants: trajectory modelling, cluster, probability fields analyses, and adjoint equations

13:00-14:00 Lunch

Short oral reports
Influence of long-term continuous anthropogenic emissions from Russian Arctic sources on Siberian and Ural cities environment

14:20-14:30 Conference closure
15:00-17:00 Enviro-RISKS project management meeting
(SCERT Seminar Hall)