



# PROGRAM

of 2<sup>nd</sup> International Conference

**“Global Warming and the Human-Nature Dimension in  
Siberia: Social Adaptation to the Changes of the  
Terrestrial Ecosystem, with an Emphasis  
on Water Environments”**

and the 7<sup>th</sup> Annual International Workshop

**"C/H<sub>2</sub>O/Energy balance and climate over boreal and  
arctic regions with special emphasis on eastern Eurasia"**

Yakutsk, Russia

8-11 October, 2013

• **Tuesday 8 October 2013**

► Venue – Lecture Hall, National Academy of Republic of Sakha (Yakutia).

2<sup>nd</sup> floor, Build. 33, Lenin Ave., Yakutsk

<Russian-English-Russian translation will be available for all presentations >

08:30 **[Registration]**

09:30 **[Opening ceremony]**

<4 speakers × 5-10 minutes presentation>

Trofim MAXIMOV (IBPC SB RAS, Leader of Projects from Russian side, Russia)

*Opening speech*

Tetsuya HIYAMA (RIHN, Project Leader, Japan)

*Welcoming speech*

Evgeniya MIKHAILOVA (Rector of NEFU, Russia)

*Greetings from NEFU*

**[Plenary session – 1]**

**GLOBAL FEATURES OF CLIMATE CHANGES IN THE NORTHERN ECOSYSTEMS**

(Chaired by Trofim MAXIMOV)

<5 speakers × 30 minute presentation>

10:00 Tetsuya HIYAMA (RIHN, Project Leader, Japan)

*Global warming and changes in Siberian terrestrial environments*

10:30 Sergey BARTSEV, Andrey DEGERMENDZHI (Institute of Biophysics, Russia)

*Comparison of "biosphere-climate" global small-scale model and regional Siberian ecosystem models in studies of greenhouse effect mechanism*

11:00 <Coffee-break>

11:15 Nikita SOLOMONOV (IBPC, RAS Corresponding Member, Counsellor, Russia)

*Global warming and bioecological effects in Yakutia – the coldest region of Siberia*

11:45 Atsuko SUGIMOTO (Hokkaido University, RIHN Core Member, Japan)

*Research activities on Arctic ecosystem of Indigirka lowland in eastern Siberia*

12:15 Rikie SUZUKI (JAMSTEC, Japan)

*Recent studies on vegetation in boreal regions by remote sensing*

13:00 – 14:00 <Lunch>

**[Plenary session – 1, continuation]**

**GLOBAL FEATURES OF CLIMATE CHANGES IN THE NORTHERN ECOSYSTEMS**

(Chaired by Sergey BARTSEV)

<3 speakers × 30 minute presentation>

14:00 Trofim MAXIMOV (IBPC, Russia)

*Permafrost-dominated ecosystems in a changing climate*

14:30 Yuri SKACHKOV (Melnikov Permafrost Institute, Russia)

*Possibility of ground temperature data's using from meteorological stations of Sakha (Yakutia) on studying of recent changes of climate influences to permafrost*

- 15:00 Pavel VORONIN (Plant Physiology Institute RAS, Russia)  
*Continental climate limitation for photosynthetic gas-exchange of main tree species in Siberia*
- 15:30 <Coffee-break>
- [Keynote session]**  
(chaired by Tetsuya HIYAMA)  
<5 speakers × 25 min presentation>
- 15:45 Liliya VINOKUROVA (IHRNIPB SB RAS, Russia)  
Keynote speech for Session 2 [Human-nature interactions in a changing climate]  
*Climate change consequences in Yakutia: social and economic challenges for rural communities*
- 16:10 Ayumi KOTANI (Nagoya University, Japan)  
Keynote speech for Session 3 [Climatic responses of carbon, water and energy cycles in northern ecosystems]  
*Net ecosystem water use efficiency over two larch forest at eastern Siberia*
- 16:35 Nikolay GERMOGENOV, Nikita SOLOMONOV, Zakhar BORISOV, Kirill SOLOMONOV (IBPC SB RAS, NEFU, Russia)  
Keynote speech for Session 4 [Biological processes during climatic changes]  
*Dynamics of terrestrial vertebrate animal population in Central Yakutia in the last 150 years under climate change and increasing anthropogenic pressure*
- 17:00 Takeshi YAMAZAKI (Tohoku University, Japan)  
Keynote speech for Session 5 [Remote sensing & Modeling for eco-climatic monitoring]  
*Long-term simulation of soil condition and energy flux in eastern Siberian taiga forests*
- 17:25 Yoshihiro IJIMA (JAMSTEC, Russia)  
Keynote speech for Session 6 [Climatic vulnerabilities of permafrost]  
*Spatio-temporal variations in permafrost and boreal forest degradations in Central Yakutia*  
<closure at 17:50>
- 19:00 **[Reception]**  
@ Restaurant of Yakutian Food “Muus Khaya”, Build. 16, Oyunskogo street, Yakutsk.

• **Wednesday 9 October 2013**

- ▶ Venue – Conference Hall of Mining Institute of the North SB RAS.  
2<sup>nd</sup> floor, Build. 43, Lenin Avenue, Yakutsk.
- 08:30 **[Registration]**  
**[Session 2]**  
**HUMAN-NATURE INTERACTIONS IN A CHANGING CLIMATE**  
(chaired by Liliya VINOKUROVA)  
<9 speakers × 20 min presentation + 5 min discussion>
- 09:00 Nikita SOLOMONOV, Roman DESYATKIN, Anatoly GOGOLEV, Viktor NOGOVITSIN (IBPC SB RAS, NEFU, Russia)  
*Dynamics of permafrost ecosystems and evolution of human populations in Central Yakutia during the Late Pleistocene and the Holocene*
- 09:25 Sardana BOYAKOVA (IHRNIPB SB RAS, Russia)  
*Assessment of the impact of climate change on transport infrastructure Yakutia*

- 09:50 Fuyuki EBATA (Niigata University, Japan)  
*The nature words in Sakha, compared with other Turkic languages*
- 10:15 Viktoriya FILIPPOVA (IHRNIPB SB RAS, Russia)  
*Adaptation to extreme impacts of climate change: the experience of the villages of Yakutia*
- 10:40 <Coffee-break>
- 10:55 Tuyara GAVRILIEVA, Igor CHIKACHEV (NEFU, Russia)  
*Features of adaptation of the Russkoye Ustye community to the ecosystem of the Indigirka River estuary*
- 11:20 Tohru IKEDA (Hokkaido University, Japan)  
*Transformation of furbearer hunting in Yakutia*
- 11:45 Svetlana KNYAZEVA (UNESCO Institute for Information Technologies in Education, Russia)  
*UNESCO project: A Networked System of Open Indigenous Knowledge Resources for Climate Change Mitigation and Adaptation in Polar Regions*
- 12:10 Yukari NAGAYAMA (Hokkaido University, Japan)  
*Indigenous Weather Knowledge in Kamchatka*
- 12:35 Yuka OISHI (Tokyo Metropolitan University, Japan)  
*Reindeer herding of Northern Khanty and forest Nenets in the post-soviet era*

13:00 – 14:00 <Lunch>

**[Session 2 – Continuation]**

**HUMAN-NATURE INTERACTIONS IN A CHANGING CLIMATE**

(chaired by Sardana BOYAKOVA)

<4 speakers × 20 min presentation + 5 min discussion>

- 14:00 Vyacheslav SHADRIN (IHRNIPB SB RAS, Russia)  
*The peoples of the North Yakutia: the historical experience of adaptation to climate change in the XVIII - XIX centuries (on historical and folkloric materials)*
- 14:25 Mikhail VASILIEV (ICRA SB RAS, Russia)  
*Impact of human activity on forest fires*
- 14:50 Atsushi YOSHIDA (Chiba University, Japan)  
*Reindeer herding and Environmental Change in the Kobyai and Olenek districts, Sakha Republic*
- 15:15 Yuriy ZHEGUSOV (IHRNIPB SB RAS, Russia)  
*Yakutian residents' daily observations of aquatic environment changes in the context of global warming (according to the sociological survey)*

15:40 <Coffee-break>

15:55 <vacant>

16:20 **[General Discussion on the results of session 2]**

<closure at 16:40 and move to IBPC for Poster Session>

• **Wednesday 9 October 2013**

► Venue – Conference Hall of Institute for Biological Problems of Cryolithozone SB RAS.  
1<sup>st</sup> floor, Build. 41, Lenin Avenue, Yakutsk.

08:30 [Registration]

[Session 3]

**CLIMATIC RESPONSES OF CARBON, WATER AND ENERGY CYCLES IN NORTHERN ECOSYSTEMS**

(chaired by Atsuko SUGIMOTO)

<9 speakers × 20 min presentation + 5 min discussion>

09:00 Tetsuzo YASUNARI (Director of RIHN, Japan)

*Interannual variation of summer hydro-climate in East Asia*

09:25 Sara LIVSHITS (IOGP SB RAS, Russia)

*Flows of hydrocarbons in the northern ecosystems and their influence on the state of the contemporary climate*

09:50 Ryuhei YOSHIDA, Masahiro SAWADA, Takeshi YAMAZAKI, Takeshi OHTA and Tetsuya HIYAMA (RIHN, Japan)

*Estimation of regional water cycle changes by various land-cover-change scenarios in eastern Siberia*

10:15 Taro NAKAI (Nagoya University, Japan)

*Characteristics of energy balance within a permafrost black spruce forest in interior Alaska for the intercomparison study with a larch forest in eastern Siberia*

10:40 <Coffee-break>

10:55 Eddy MOORS (Wageningen University, Netherlands)

<Presentation name is unconfirmed>

11:20 Yoshihiro TACHIBANA (JAMSTEC, Japan)

*Climatological features of atmospheric and terrestrial water cycles in the three great Siberian rivers and their interannual variations*

11:45 Aleksey DESYATKIN (IBPC SB RAS, Russia)

*Carbon budget of thermokarst depression on example of Ulakhan-Suk Khan alas*

12:10 Oleg MIKHAYLOV, Svetlana ZAGIROVA (Institute of Biology, Komi Science Centre, Russia)

*The ecological factors impact on methane fluxes in the ecosystem of meso-oligotrophic peatland*

12:35 Aytalina EFIMOVA (IBPC SB RAS, Russia)

*Catastrophic floodings on the Alazeya River valley (North-East Yakutia) as a consequence of the air temperatures increasing*

13:00 – 14:00 <Lunch>

**[Session 3 – Continuation]**

**CLIMATIC RESPONSES OF CARBON, WATER AND ENERGY CYCLES IN NORTHERN ECOSYSTEMS**

(chaired by Ayumi KOTANI)

<5 speakers × 20 min presentation + 5 min discussion>

14:00 Alexander KONONOV (IBPC SB RAS, Russia)

*Interannual variations of soil CO<sub>2</sub>-efflux in larch forests of Central and South-Eastern Yakutia*

14:25 Kynney KIRILLINA (NEFU, Russia)

*Climate change in Yakutia during XX-XXI centuries*

14:50 Anastasiya TIMOKHINA (Institute of Forest SB RAS, Russia)

*The temporal variability of atmospheric CO<sub>2</sub> over middle taiga ecosystems in central Siberia from 2006 to 2012 years*

15:15 Vadim STARODUBTSEV (ICRA SB RAS, Russia)

*Methane concentration measurements in surface air (Polar Geocosmophysical Observatory – PGO Tiksi)*

15:40 Roman PETROV (IBPC SB RAS, Russia)

*Energy budget investigations of the Central Yakutian larch forests using eddy covariance technique*

16:05 <vacant>

16:45 **[Poster session] – Front Space of the IBPC Lecture Hall**

<closure at 18:00>

• **Thursday 10 October 2013**

▶ Venue – Conference Hall of Institute for Biological Problems of Cryolithozone SB RAS.  
1<sup>st</sup> floor, Build. 41, Lenin Avenue, Yakutsk.

08:30 **[Registration]**

**[Session 4]**

**BIOLOGICAL PROCESSES DURING CLIMATIC CHANGES**

(chaired by Ayaal MAKSIMOV)

<9 speakers × 20 min presentation + 5 min discussion>

09:00 Innokentiy OKHLOPKOV (IBPC SB RAS, Russia)

*Mammal species in Yakutia as possible global climate change indicators*

09:25 Alexandr ISAEV (IBPC SB RAS, Russia)

*Aboveground biomass of sparse larch forests on tree line (North-East Siberia)*

09:50 Yuri ROZHKOVA (Olekminsky state nature reserve, Russia)

*Features of biological activity of frozen soil Olyekmisky reserve (zapovednik)*

10:15 Shirow TATSUZAWA (Hokkaido University, Japan)

*5 years corporative study of reindeer migration: its result and prospect*

10:40 <Coffee-break>

10:55 Anatoliy NIKOLAEV (NEFU, Russia)

<Presentation name is unconfirmed>

- 11:20 Valentina SOFRONOVA (IBPC SB RAS, Russia)  
*Down regulation of PSII efficiency in sun exposed assimilating branchlets of Ephedra monosperma during autumn cold hardening*
- 11:45 Irina DRANAIEVA (NEFU, Russia)  
*Steady and adaptive approach to the study of biodiversity and the preservation of the environment*
- 12:10 Tatiana IVANOVA (IBPC SB RAS, Russia)  
*Effect of radioactive contamination of Yakutia over microflora of cryogenic soils*
- 12:35 Marina TERYTYEVA (IBPC SB RAS, Russia)  
*Eco-physiological peculiarities of photosynthesis of Larix cajanderi in Siberian larch forest*
- 13:00 – 14:00 <Lunch & Poster session>

**[Session 4 – Continuation]**

**BIOLOGICAL PROCESSES DURING CLIMATIC CHANGES**

(chaired by Alexander KONONOV)

<7 speakers × 20 min presentation + 5 min discussion>

- 14:00 Tatiana TATARINOVA et al. (IBPC SB RAS, Russia)  
*Dehydrins associated with extreme frost hardiness of Betula platyphylla in Central Yakutia*
- 14:25 Alexandra POPOVA, Atsuko SUGIMOTO, N. TOKUCHI, Trofim MAXIMOV (BEST Center, NEFU, Russia)  
*Study on N use by larch in the north-eastern Siberia boreal forest using tracer 15N*
- 14:50 Ayaal MAKSIMOV (IBPC SB RAS, Russia)  
*Photosynthesis of larch at different permafrost areas: case study of Canada and Yakutia*
- 15:15 Tatiana SIVTSEVA (NEFU, Russia)  
*The role of forest ecosystems and cultivated land of Yakutia in carbon budget in Kyoto protocol*
- 15:40 Evgeniya VARLAMOVA et al. (ICRA SB RAS, Russia)  
*Research of multiannual dynamics of leaf area index in Eastern Siberia*
- 16:05 Nadezhda DANILOVA (IBPC SB RAS, Russia)  
*Introduction of Iris cetosa in Central Yakutia*
- 16:30 Ludmila PESTRYAKOVA (NEFU, Russia)  
*<Presentation name is unconfirmed>*
- 17:00 **[General Discussion on the results of session 4]**
- 18:00 **[Closing ceremony]**  
Tetsuya HIYAMA (concluding remarks)  
Trofim MAXIMOV (closing address)  
Tetsuzo YASUNARI (closing address)  
[closure at 18:30]

• **Thursday 10 October 2013**

► Venue – Conference Hall of Mining Institute of the North SB RAS.  
2<sup>nd</sup> floor, Build. 43, Lenin Avenue, Yakutsk.

08:30 **[Registration]**

**[Session 5]**

**REMOTE SENSING & MODELING FOR ECO-CLIMATIC MONITORING**

(chaired by Takeshi YAMAZAKI)

<8 speakers × 20 min presentation + 5 min discussion>

09:00 Shamil MAKSYUTOV, V. SEDYKH (National Institute for Environmental Studies, Japan)

*Forest mapping with remote sensing data in Laryegan basin*

09:25 Victor BROVKIN (Max Planck Institute for Meteorology, Germany)

*Climate-vegetation feedbacks in high latitudes in Earth System Models*

09:50 Yasushi YAMAGUCHI (Nagoya University, Japan)

*Comparison of vegetation changes in Siberia detected by SPOT-vgt and MODIS data*

10:15 Vladimir SOLOVIEV (ICRA SB RAS, Russia)

*Forest fire detection and monitoring system in Yakutia based on remote sensing data*

10:40 <Coffee-break>

10:55 Boris BORISOV (IBPC SB RAS, Russia)

*Usage of DHI-index in mapping of biodiversity of terrestrial mammals in Yakutia*

11:20 Thomas KLEINEN (Max Planck Institute for Meteorology, Germany)

*Modelling organic soils and their role in the carbon cycle*

11:45 Oleg TOMSHIN (ICRA SB RAS, Russia)

*Studying of forest fires influence on lower atmosphere on remote sensing data*

12:10 Marleen VERMEULEN (Wageningen University, Netherlands)

*Modelling vegetation response to extreme temperatures using a dynamic vegetation model – photosynthesis and C allocation*

12:35 **[General Discussion on the results of Session 5]**

13:00 – 14:00 <Lunch>

**[Session 6]**

**CLIMATIC VULNERABILITIES OF PERMAFROST**

(chaired by Yoshihiro IJIMA)

<9 speakers × 20 min presentation + 5 min discussion>

14:00 Alexander FEDOROV (MPI SB RAS, Russia)

*Features of cryogenic landscape's reactions on recent climate changes in Eastern Siberia*

14:25 Alexander CHEVYCHELOV (IBPC SB RAS, Russia)

*Pyrogenesis and evolution of frozen soils*

14:50 Ho-Teak PARK (JAMSTEC, Japan)

*Simulating the contribution of snow conditions to permafrost climate*

15:15 Pavel KONSTANTINOV (MPI SB RAS, Russia)

*Influence of soil moisture and snow cover on the thermal state of permafrost in Central Yakutia*

- 15:40 <Coffee-break>
- 15:55 Oleg TREGUBOV (NEISRI FEB RAS, Russia)  
*Seasonal thawing dynamics as tundra soil moisture regime changing factor and vegetation transformation factor*
- 16:20 Makoto OKUMURA (IRIDeS, Tohoku University, Japan)  
*Vulnerability of Infrastructure based on Physical Characteristics of Ice*
- 16:45 Go IWAHANA (University of Alaska, USA)  
*Cryostratigraphy and water stable isotope profiles of the active layers and the upper permafrost layers near Yakutsk, Eastern Siberia, Russia*
- 17:10 Leonid GAGARIN (MPI SB RAS, Russia)  
*Dynamics of thermal-suffusion processes on the Bestyakhskaya terrace of the Lena river, Central Yakutia*
- 17:35 Matrena OKONESHNIKOVA, Roman DESYATKIN (IBPC SB RAS, Russia)  
*Soil of Larch forests in "Spasskaya Pad" and "Elgeeyi" stations*  
<closure at 17: 50 and move to IBPC for Closing ceremony>

## • **Friday 11 October 2013**

### **[Excursion to Spasskaya Pad Scientific Station]**

< ~ 40-45 peoples >

- 10:00 Start from IBPC by two bus
- 11:30 Excursion to forest sites
- 13:00 Reception at station
- 15:30 Lecture and offstage discussions
- 17:00 Return to Yakutsk

### **[Poster presentations]**

Time: 9 October 2013 at 16:45-18:00 and 10 October 2013 at lunch-time.

Venue: Front Space of the IBPC Lecture Hall

<17 posters >

- P01 Sargylana BORISOVA (IBPC SB RAS, Russia)  
*Preservation and restitution of natural vegetation of Yakutia*
- P02 Zakhar BORISOV (IBPC SB RAS, Russia)  
*Condition of protection of flora of the Arctic Yakutia in protected territories*
- P03 Sardana BOYAKOVA, T. Maximova (IHRNIPB SB RAS, Russia)  
*Folk meteorology of Yakuts: history and modernity.*
- P04 Inga BYSYKATOVA (IBPC SB RAS, Russia)  
*Expansion of Sandhill Crane in Northeast Asia*
- P05 Lyudmila GABYSHEVA (IBPC SB RAS, Russia)  
*Changes of microclimatic and soil conditions after forest fires in Central Yakutia*
- P06 Angelina EGOROVA (IBPC SB RAS, Russia)  
*Flora of Kytalyk resource reserve (Arctic Yakutia)*
- P07 Vanda IGNATIEVA (IHRNIPB SB RAS, Russia)  
*The Evolution of Climate and Economy: the Presentation, Opinions and Estimates Horse Breeders of Yakutia*

- P08 Alexandra IVANOVA (IBPC SB RAS, Russia)  
*Degradation of permafrost soils of the Alaseya River valley due to flood inundation*
- P09 Masaru KAGATSUME (Kyoto University, Japan)  
*Effects of Global Warming on the Reindeer Nomads Economies and Their Adjustments after Restructuring of Government System - the approach by the System Dynamics model*
- P10 Yuji KODAMA (National Institute of Polar Research, Japan)  
*Recent Japanese activity in Arctic Environment Science.*
- P11 Stanislav KSENOFONTOV (IBPC SB RAS, Russia)  
*Climate change impacts to rural Yakutia*
- P12 Atsushi NAKADA (Hokkaido Museum of Northern Peoples, Japan)  
*Reindeer herders and Environmental Change in the Oimyakon district, Sakha Republic*
- P13 Takeshi OHTA (Nagoya University, Japan)  
*Interannual variations of water and carbon balances affected by the change in annual precipitation in an eastern Siberian larch forest during the 1998 – 2011 year.*
- P14 Atsushi SAITO (Nagoya University, Japan)  
*Interannual change of latent fluxes from overstory and understory with environmental changes at the Larch forest in the East Siberia*
- P15 Toru SAKAI (RIHN, Japan)  
*The impact of flood over the Lena river*
- P16 Peter SOBAKIN (IBPC SB RAS, Russia)  
*The role of pyrogenic and cryogenic processes in <sup>137</sup>Cs migration in cryotic soils of Central Yakutia*
- P17 Vera ZAKHAROVA, Nikolay KARPOV (IBPC SB RAS, Russia)  
*Monitoring of vegetation on mountain mining in Arctic Yakutia*
- P18 Ivan CHIKIDOV (IBPC SB RAS, Russia)  
*Change of vegetation in larch forest after mass outbreak of the *Dendrolimus superans sibiricus* Tschetv.*
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**Addresses (see the map):**

- 1) **National Academy of Sciences of Republic of Sakha (Yakutia):** 33, Lenin Ave., Yakutsk, Russia.
  - 2) **Institute for Biological Problems of Cryolithozone (IBPC):** 41, Lenin Ave., Yakutsk, Russia.
  - 3) **Mining Institute of the North (MIN):** 43, Lenin Ave., Yakutsk, Russia.
  - 4) **Reception: Restaurant of Yakutian Food “Muus-Khaya”:** 16, Oyunskogo str., Yakutsk, Russia.
  - 5) **Institute of Humanity Research and of the North Indigenous People Problems (INIPB):** 1, Petrovskogo Str., Yakutsk, Russia
- **North-Eastern Federal University:** 58, Belinskogo Str., Yakutsk, Russia.

