



PAN-EURASIAN EXPERIMENT

PEEX

*In-Situ Atmospheric-Ecosystem
Collaborating Stations-Russian Federation*
e-CATALOGUE 2018

This catalogue is part of the PEEEX *in situ* observations - Working Group activities coordinated by Dr. Hanna K. Lappalainen and Prof. Tuukka Petäjä, University of Helsinki.

PEEX Collaborating Stations in the Russian Federation – Catalogue 2018

This catalogue is published in electronic format and conceived as a living document. It will be updated periodically.

Version1, August 2018

Updated on December 2018

www.atm.helsinki.fi/peex/index.php/peex-russia-in-situ-stations-e-catalogue

©PEEX, 2018

Concept development: Hanna K. Lappalainen, Alla Borisova, Nuria Altimir.
Layout and graphics: Nuria Altimir.
Photos in station pages: by the station collaborators.

Catalogue coordination group

Bashmakova, Iryna	University of Helsinki
Borisova, Alla	University of Helsinki
Chalov, Sergey	Moscow State University
Konstantinov, Pavel	Moscow State University
Lappalainen, Hanna	University of Helsinki
Mahura, Alexander	University of Helsinki

in collaboration with SMEAR measurement concept, University of Helsinki

Prof. Bäck, Jaana	ecosystems
Prof. Järvi, Leena	urban
Dr. Ojala, Anne	lakes
Prof. Petäjä, Tuukka	atmospheric composition
Prof. Pumpanen, Jukka	soil

The information and visual materials was provided by the Heads and Staff of

A.M. Obukhov Institute of Atmospheric Physics, RAS
A.N. Severtsov Institute of Ecology and Evolution RAS
Baikal Institute of Nature Management SB RAS
Earth Cryosphere Institute SB RAS
Institute of Biology of Komi Science Center UB RAS
Institute of Geography RAS
Institute of Limnology RAS
Institute of Monitoring of Climatic and Ecological Systems SB RAS
Institute of Physicochemical and Biological Problems in Soil Science RAS
Institute of Solar-Terrestrial Physics SB RAS
Kamchatka Branch of Pacific Geographical Institute FEB RAS
Lomonosov Moscow State University, Faculty of Geography
National Research Tomsk State University
P. I. Melnikov Permafrost Institute SB RAS
Pacific Geographical Institute (PGI) FEB RAS
Russian State Hydrometeorological University (RSHU)
Saint-Petersburg State University
Schmidt Institute of Physics of the Earth RAS
Southern Scientific Center (SSC) RAS
University of Eastern Finland
V.E. Zuev Institute of Atmospheric Optics SB RAS
Voevodsky Institute of Chemical Kinetics and Combustion SB RAS
Yugra State University

RAS: Russian Academy of Sciences; SB, UB, FEB: Siberian, Ural and Far East Branch

Acknowledgements: Prof. Nina Zaitseva and Dr. Pavel Alekseychik for their help at initial stages of this work.

The Pan-Eurasian Experiment (PEEX) initiative is an international, multi-disciplinary, multiscale program focused on solving interlinked global challenges that are influencing societies in the Northern Eurasian region, Russia and China. PEEX started in 2012 and has developed a working program with four major activity types: Research Agenda, Infrastructures, Education, and Services to Society.

PEEX aims to establish an *in situ* observation network to cover environments that span from the Arctic coastal regions to the tundra and to boreal forests, and from pristine locations to urban megacities. PEEX envisions the development of a coordinated, comprehensive PEEX observation network that contributes to the sustainable development of the Northern Eurasian regions. Such network is aimed at providing quantified information on climate relevant variables that nurtures research communities as well as being used to construct services for the society, such as early warning systems. PEEX observational network will be based on two components: (i) the existing stations and their activities and (ii) the establishment of new stations. The upgrading plans of the existing stations as well as the new stations will be based a SMEAR (Stations for Measuring Earth Surface – Atmosphere Relations) concept.

This catalogue is a working tool towards the construction of the PEEX observational network. It collects information on the Russian stations in the PEEX collaboration network, introducing an overview of their measurements and providing contact information. The aim of the catalogue is to promote the research collaboration, indicate the station as partner in Russian Federation stations - PEEX collaboration network, and give positive visibility to the stations activities.

How it is done. This catalogue is based on an initial inventory -conducted by the Russian Academy of Sciences (RAS) and Moscow State University together with the University of Helsinki- of over 200 *in situ* stations operating in the Arctic and Subarctic Eurasian regions. PEEX designed a metadatabase to collect detailed information on these stations characteristics and measurements and

invited the sites to collaborate in the population of the database. At the same time, we produced one-page leaflet for each station in order to provide a fast glimpse of each site characteristics. The leaflet is the result of the interaction between PEEEX headquarters and site managers to offer the most relevant information.

This catalogue collects the basic information on the stations that have actively shared their details with us and are ready, in one way or other, to share data through PEEEX platforms in the future.

This catalogue is published in electronic format and conceived as a living document. It will be updated periodically. Any stations working on the PEEEX domain are welcome to join.

The information on the stations is given per-station basis as well as in a collective and comparative way summarized in maps and tables.

We hope you find this catalogue useful.

Helsinki, August 2018

PEEX HQ Office Helsinki

PEEX Moscow Office at the Moscow State University

For new contributions and additions,
please contact us at:
peex-hq@helsinki.fi

Introduction

Page structure.....i7
[Map1](#): Location and numbering.....i8-i9
[Map2](#): Overview of measurements.....i10
[Map3](#): Overview of atmospheric measurementsi11
[Map4](#): Overview of measurement other than atmospheric.....i11

Stations in this catalogue

[Description of stations](#).....0-59

Annexes

WMO and GAW stations.....A1-A2
[Map A1](#): This catalogue, WMO, and GAW stations overlap.....A1
[Map A2](#): GAW SIS stations in Russian Federation.....A2
[Table A1](#): Summary of type of variables.....A3-A4

Which station is in this page:

Name of the Site and number in the map.

Where is the station measuring:

Type of surface + geographical location.

Who is running the station:

Institutions that own or manage the station or other collaborating institutions

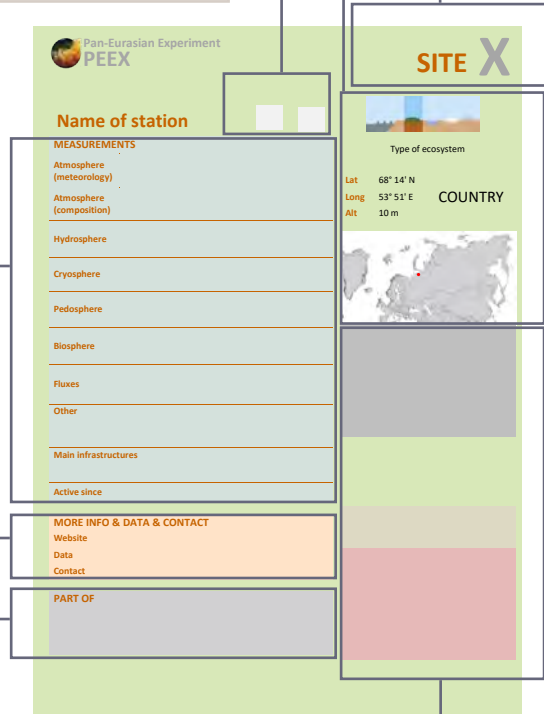
What is this station measuring:

Overview of the measurements according to system compartments + fluxes between compartments + other relevant information.

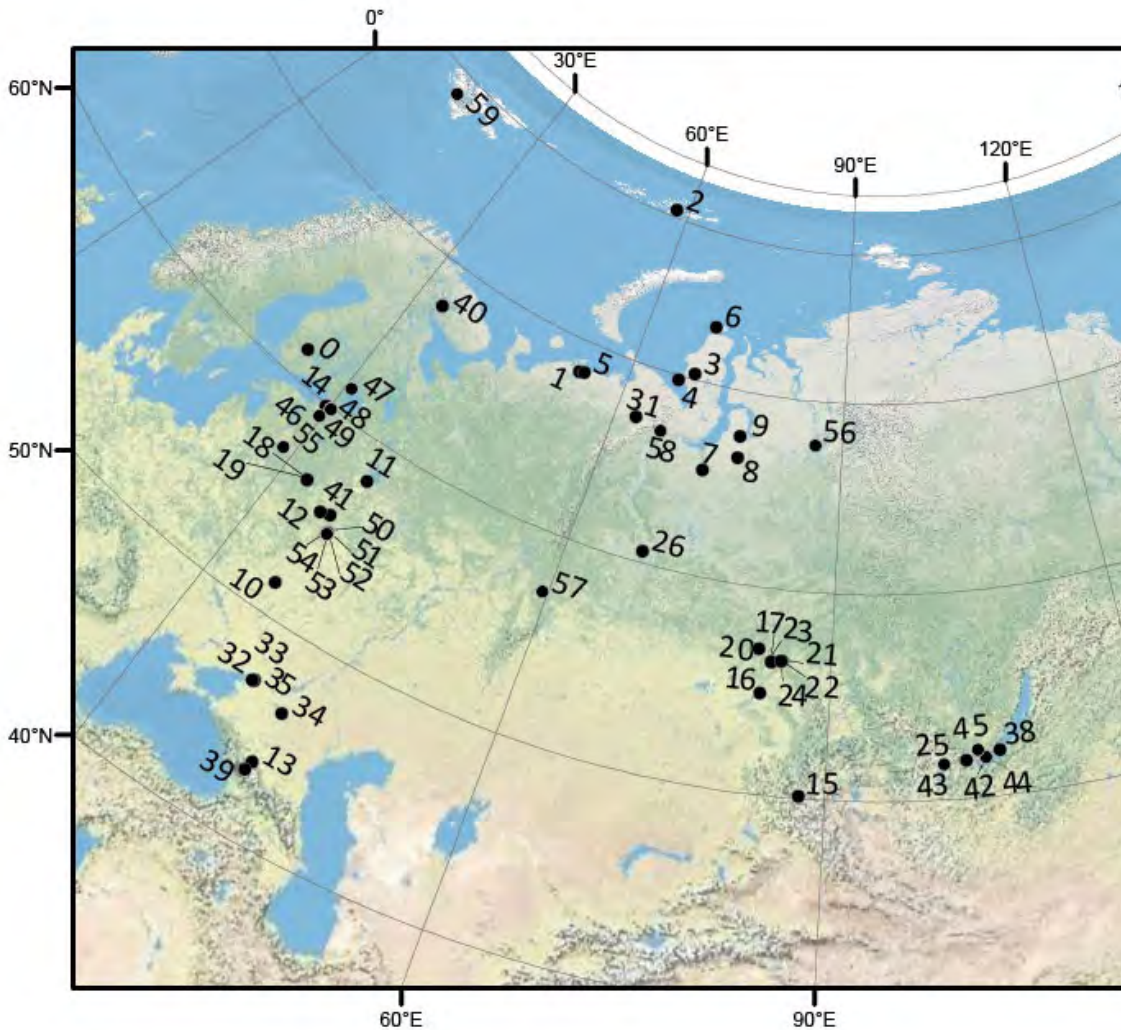
Who to contact for more information and/or data requests.

With whom is the station cooperating:

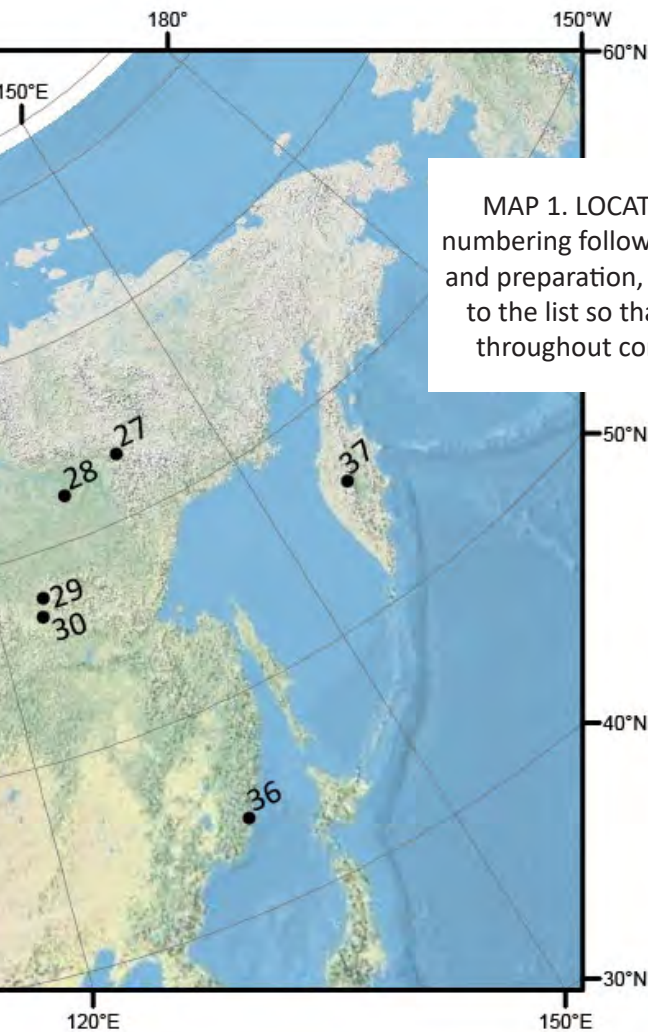
List of major projects or networks where the station is already a partner.

**How does the station look like:**

Images of the site, station surroundings, or measuring infrastructure.



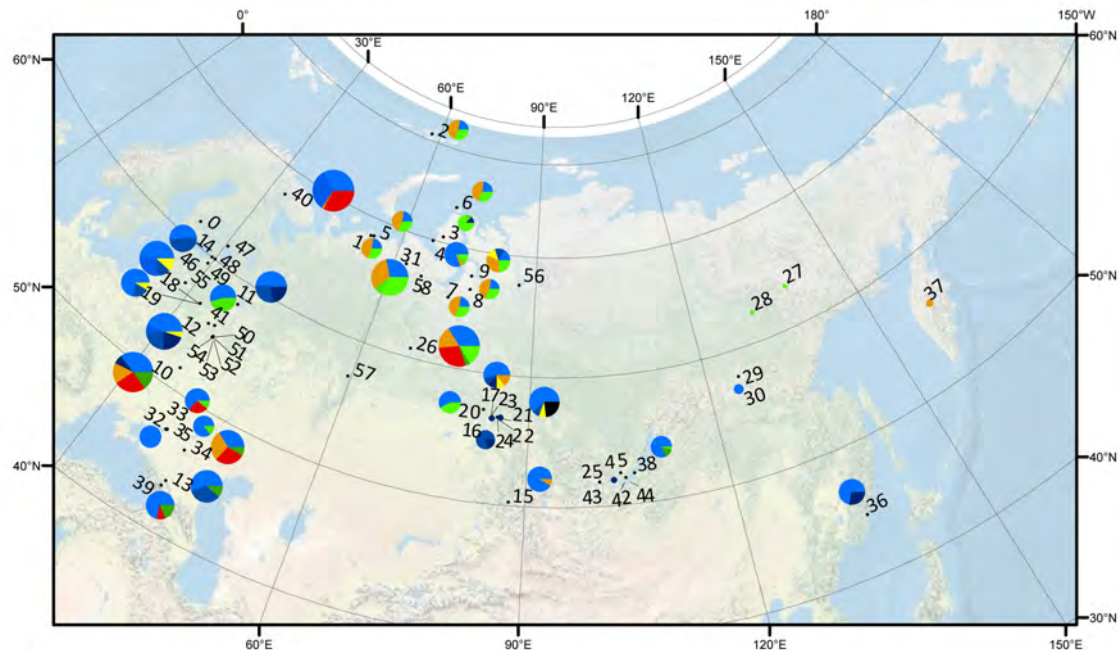
- | | |
|--|--|
| 0 Hyytiälä | 10 Kursk BS |
| 1 Kashin | 11 Borok GO |
| 2 Heiss | 12 Zvenigorod SS |
| 3 Vaskiny Dachi | 13 Kisdlovodsk HMS |
| 4 Marre-Sale Weather Station | 14 Peterhof |
| 5 Bolvansky | 15 Aktru |
| 6 Belyy | 16 Novosibirsk MIS |
| 7 Nadym | 17 Fonovaya |
| 8 Urengoy FT | 18 Okovskiy forest RyFyo:bog |
| 9 Urengoy T | 19 Okovskiy forest RyFyo |



- [20](#) Vasyuganie
- [21](#) IMCES GO
- [22](#) Siberian Lidar Station
- [23](#) Tomsk, site Kireevsk
- [24](#) Tomsk, site Tomsk
- [25](#) Tory
- [26](#) Mukhrino
- [27](#) Lazurnaya
- [28](#) Chyappara
- [29](#) Tajezhka

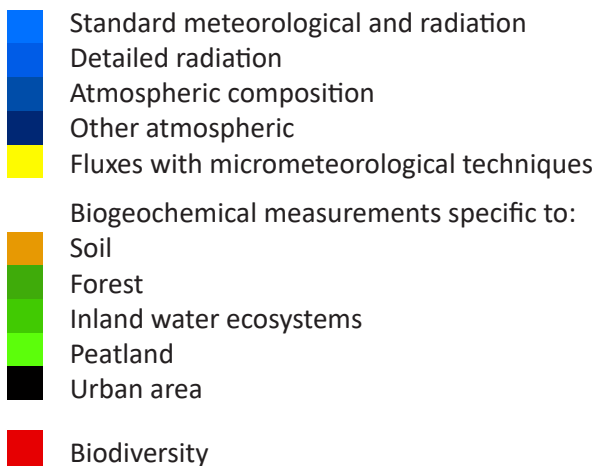
- [30](#) Lookuchakit
- [31](#) Seida-Vorkuta
- [32](#) Donskoy
- [33](#) Kagalnik
- [34](#) Manych
- [35](#) Vzmorje
- [36](#) Smyichka
- [37](#) Bolgyt
- [38](#) Istomino
- [39](#) Elbrus

- [40](#) Khibiny
- [41](#) Krasnovidovo
- [42](#) Listvyanka
- [43](#) Mondy
- [44](#) Bolshie Koty
- [45](#) Irkutsk Urban Station
- [46](#) RSHU-Daimische
- [47](#) RSHU-Valaam
- [48](#) RSHU-Urban1
- [49](#) RSHU-Urban2
- [50](#) LTM-Agro
- [51](#) LTM-MMF
- [52](#) LTM-SDF
- [53](#) LTM-CG
- [54](#) LTM-UG
- [55](#) Pushkinskie Gory
- [56](#) Igarka
- [57](#) Kourovka
- [58](#) Labytnangi
- [59](#) Barentsburg (AARI)

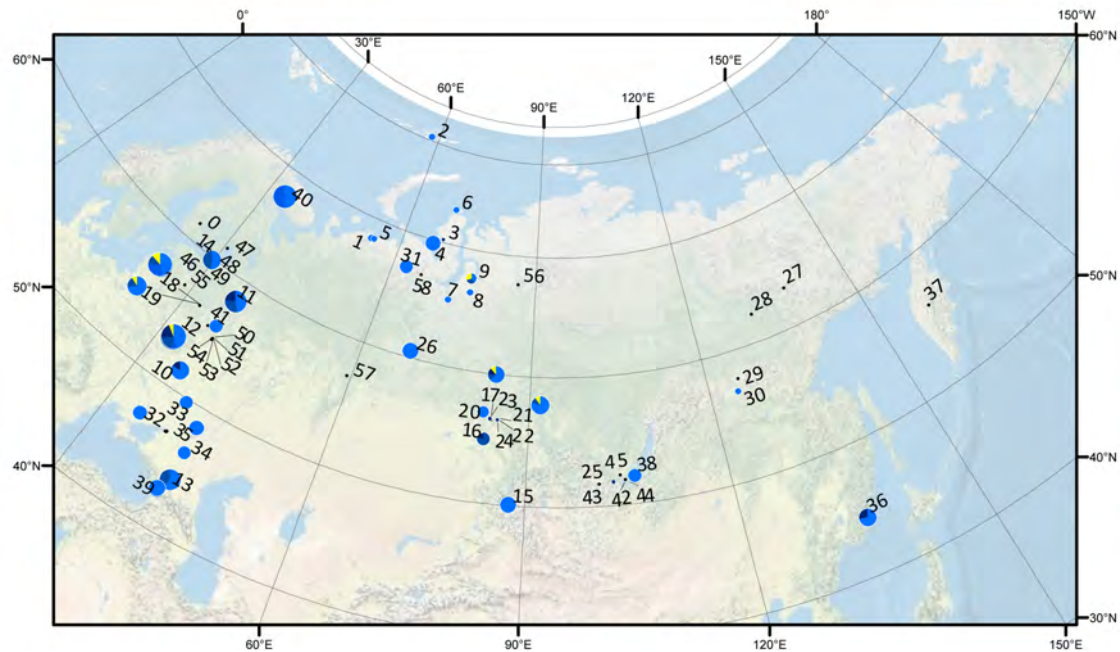


MAP 2. Overview of the measurements.

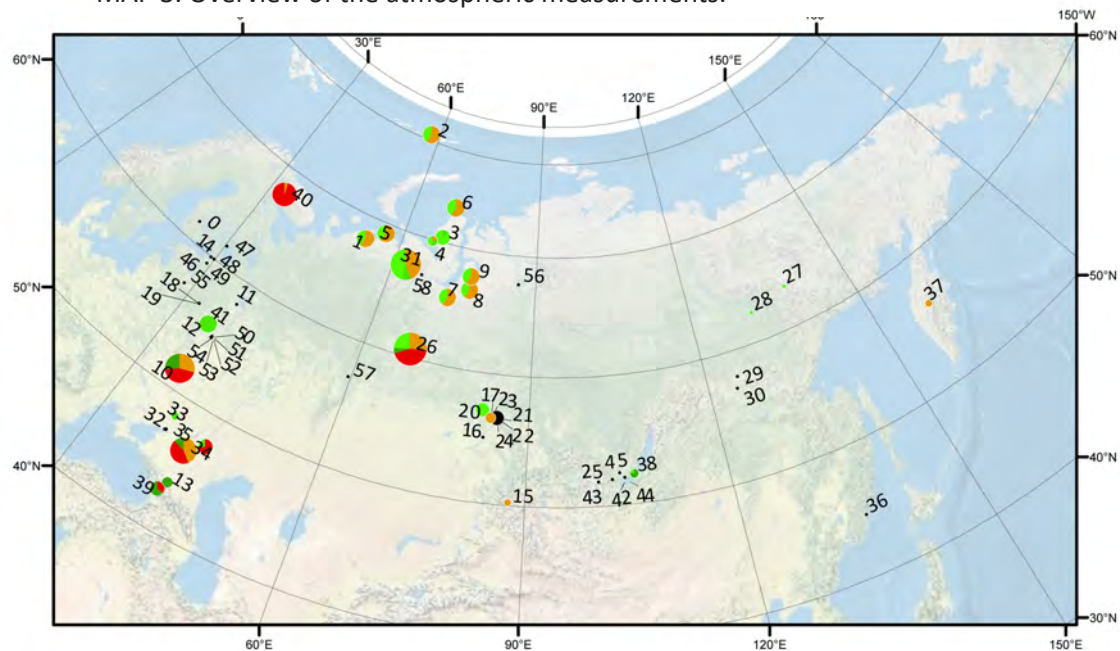
Type of measurements



MAPS 2-4. OVERVIEW. Relative amount and variety of variables measured at the sites, according to the contents of the metadatabase.



MAP 3. Overview of the atmospheric measurements.



MAP 3. Overview of the measurements other than atmospheric.

SMEAR II: Station for measuring Ecosystem – Atmosphere Relations



Boreal forest + lake

MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, ambient pressure, temperature, and relative humidity. Solar radiation (PAR, UV, longwave, 4-components). Cloud and boundary layer height.

Atmosphere (composition) Aerosol quantity and quality (detailed) Concentration of CO₂, H₂O, CH₄, CO, O₃, SO₂, NO, NO_x, VOC, NH₃, PM10, PAH.

Hydrosphere Amount and chemical composition of run-off, stemflow, rainfall.

Cryosphere Snow depth and water content.

Pedosphere Temperature, water potential, water content, matric potential, soil solution, trace gas concentration profile.

Biosphere Forest ecophysiology and productivity.

Fluxes Momentum, heat, CO₂, H₂O, O₃, NO_x, VOC, N₂O, COS. Stand, branch, forest floor, soil and/or intracanopy level. Micrometeorological and/or chamber-based methods. Deposition of PAH, Hg.

Other

Also measurement over a lake.

Main infrastructures

Isolated catchment area. Instrumental towers of 18 m and 128 m for meteorology, air composition and fluxes and 35 m walk up tower for aerosol measurements.

Active since 1995

MORE INFO & DATA & CONTACT

Website www.atm.helsinki.fi/SMEAR/index.php/smeaar-ii

Data Visualization and download from SmartSmear www.tdata.fi/web/smart/smeaar

Contact General: Pasi Kolari, pasi.kolari@helsinki.fi
Data: Heikki Junninen, heikki.junninen@helsinki.fi

PART OF

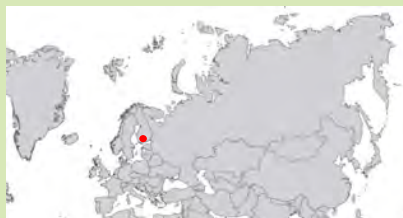
ICOS (Integrated Carbon Observation System)
ANAEE (Analysis and Experimentation on Ecosystems)
eLTER (European Long Term Ecosystem Research)
WMO (World Meteorological Organization)
ACRIS (Aerosol, Clouds, and Trace Gases Research Infrastructure)
CRAIC (Cryosphere-Atmosphere Interactions in a Changing Arctic Climate)

Lat 61° 31' N

Long 24° 17' E

Alt 181 m

FINLAND





Kashin



Tundra peatland

MEASUREMENTS

Atmosphere (meteorology) Temperature.

Atmosphere (composition)

Hydrosphere Water table depth.

Cryosphere

Pedosphere Bulk density, amount of organic matter, soil/peat temperature profile down to the bed rock (bore hole), soil/peat water content, soil nutrient concentration and chemical characteristics.

Biosphere Biodiversity, moss and lichen ground vegetation species characterization and ground cover, litterfall.

Fluxes

Other

Hosting intensive field studies, development of novel instrumentation. 2008-2015: annual permafrost intensive work at the station, surveys of site and boreholes, collecting temperature data.

Main infrastructures

No permanent buildings.

Active since 2008

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Galina Malkova, galina_malk@mail.ru

PART OF

TSP (Thermal State of Permafrost)

CALM (Circumpolar Active Layer Monitoring)

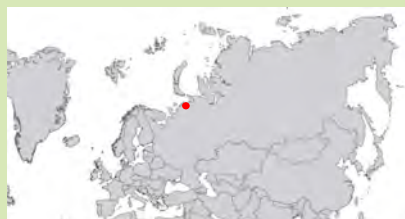
GTN-P (Global Terrestrial Network - Permafrost)

Lat 68° 14' N

Long 53° 51' E

Alt 10 m

**RUSSIAN
FEDERATION**



Heiss



Polar desert

MEASUREMENTS

Atmosphere (meteorology) Temperature.

Atmosphere (composition)

Hydrosphere Water table depth.

Cryosphere Snow depth and density. Permafrost temperature and active layer thickness in different landscapes, cryogenic processes, ground temperature profile down to the bed rock (borehole).

Pedosphere Soil water holding capacity (%), soil bulk density, amount of soil organic matter, soil nutrient concentrations, soil chemical characteristics (pH, CEC, C and N content). Temperature profiles of the soil/peat layers, soil/peat temperature profile down to the bed rock.

Biosphere Moss and lichen ground cover, plant biomass, species composition, biodiversity of plants and animals.

Fluxes CH₄

Other

Hosting intensive field studies, development of novel instrumentation.

Main infrastructures

No permanent buildings.

Active since 2010

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Pavel Orekhov, orekhov.eci@gmail.com

PART OF

TSP (Thermal State of Permafrost)

CALM (Circumpolar Active Layer Monitoring)

GTN-P (Global Terrestrial Network - Permafrost)

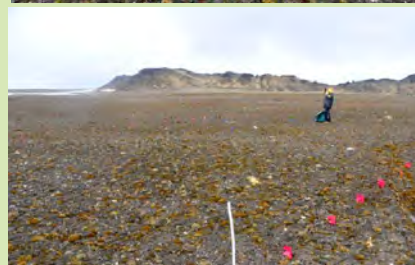
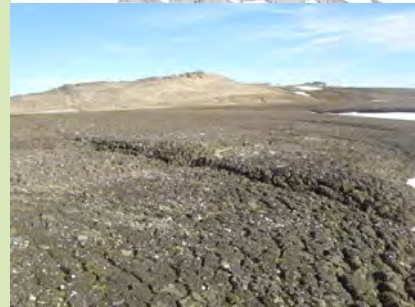
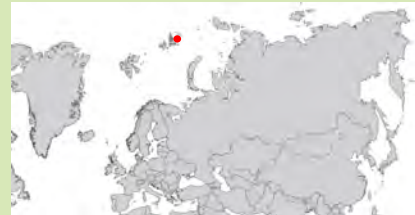
GCW (Global Cryosphere Watch)

Lat 80° 35' N

Long 58° 01' E

Alt 12 m

**RUSSIAN
FEDERATION**





Vaskiny Dachi

MEASUREMENTS

Atmosphere (meteorology) Temperature.

Atmosphere (composition)

Hydrosphere Discrete sampling of water column DOC concentration, bathymetry. Discharge (catchment).

Cryosphere Active layer thawing and temperature. Snow depth and snow water content.

Pedosphere Temperature profiles of the soil/peat layers, soil/peat temperature profile down to the bed rock (bore hole), soil/peat water content.

Biosphere Ground vegetation species characterization, aboveground biomass, leaf area index (LAI), hyperspectral canopy measurements, litterfall, biodiversity.

Fluxes

Other

Hosting intensive field studies. Inter-platform calibrations and verifications (in-situ, satellite, airborne). Focused campaigns to determine the connections between the fluxes and environmental and ecosystem factors.

Main infrastructures

No permanent buildings.

Active since 1988

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Artem Khomutov, akhomutov@gmail.com
Marina Leibman, moleibman@mail.ru

PART OF

CALM (Circumpolar Arctic Layer Monitoring)

TSP (Thermal State of Permafrost)

GTN-P (Global Terrestrial Network – Permafrost)

COLD YAMAL (CCombining remote sensing and field studies for assessment of Landform Dynamics and permafrost state on Yamal)

LCLUC-Yamal (with NASA)

POLYAR (Process of Organic transport in Lakes of the Yamal Region)



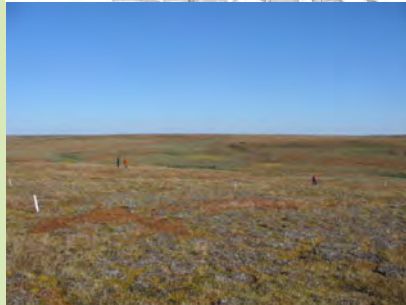
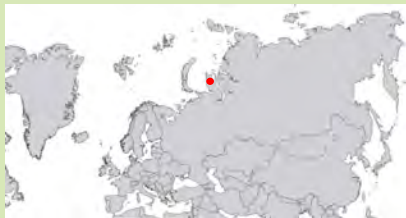
Tundra peatland+lake

Lat 70° 16' N

Long 68° 54' E

Alt 35 m

**RUSSIAN
FEDERATION**





Marre-Sale Weather Station



Typical tundra

MEASUREMENTS

Atmosphere (meteorology) Air temperature, wind speed, precipitation, relative humidity, cloud.

Atmosphere (composition)

Hydrosphere Water content in active layer.

Cryosphere Snow depth and density. Permafrost temperature and active layer thickness in different landscapes.

Pedosphere Temperature of soil.

Biosphere

Fluxes

Other

Marine hydrology, including sea ice, water temperature in the shallow zone.

Main infrastructures

Isolated area.

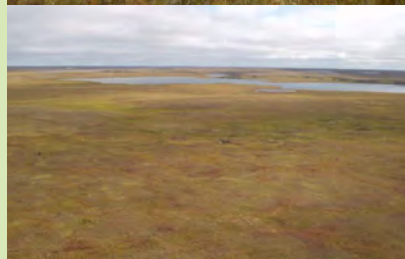
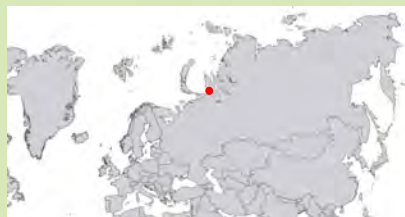
Active since

Lat 69° 43' N

Long 66° 53' E

Alt 29 m

**RUSSIAN
FEDERATION**



MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Alexander Vasiliev, al.a.vasiliev@gmail.com

PART OF

TSP (Thermal State of Permafrost)

CALM (Circumpolar Active Layer Monitoring)

GTN-P (Global Terrestrial Network - Permafrost)



Bolvansky



Tundra

MEASUREMENTS

Atmosphere (meteorology) Temperature.

Atmosphere (composition)

Hydrosphere Water table depth.

Cryosphere

Pedosphere

Soil water holding capacity (%), soil bulk density, amount of soil organic matter, soil water content, soil nutrient concentrations, soil chemical characteristics (pH, CEC, C and N content).
Temperature profiles of the soil layers, soil temperature profile down to the bed rock (bore hole).

Biosphere Moss and lichen ground cover, ground vegetation species characterization, litterfall, biodiversity.

Fluxes

Other

Field campaigns during 1999-2015: annual permafrost intensive works at the station, site and boreholes surveys, temperature data collecting. Also hosting intensive atmospheric field studies and development of novel instrumentation.

Main infrastructures

No permanent buildings.

Active since 1983

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Galina Malkova, galina_malk@mail.ru

PART OF

TSP (Thermal State of Permafrost)

CALM (Circumpolar Active Layer Monitoring)

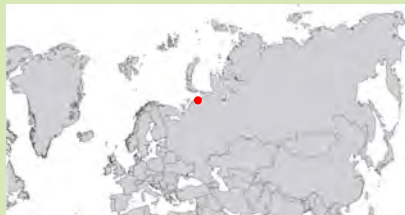
GTN-P (Global Terrestrial Network - Permafrost)

Lat 68° 17' N

Long 54° 30' E

Alt 25 m

**RUSSIAN
FEDERATION**





Belly



Tundra peatland

MEASUREMENTS

Atmosphere (meteorology) Temperature.

Atmosphere (composition)

Hydrosphere Water table depth.

Cryosphere Snow depth and density. Permafrost temperature and active layer thickness in different landscapes, cryogenic processes, ground temperature profile down to the bed rock (borehole)

Pedosphere Soil water holding capacity (%), soil bulk density, amount of soil organic matter, soil nutrient concentrations, soil chemical characteristics (pH, CEC, C and N content). Temperature profiles of the soil/peat layers, soil/peat temperature profile down to the bed rock.

Biosphere Moss and lichen ground cover, plant biomass, species composition, biodiversity of plants and animals.

Fluxes CH₄

Other

Coastal dynamics. Field campaign during 2009-2017: annual permafrost intensive works at the station, site and boreholes surveys, and temperature data collecting. Also hosting intensive atmospheric field studies and development of novel instrumentation.

Main infrastructures

No permanent buildings.

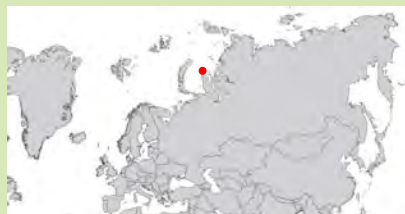
Active since 2009

Lat 73° 20' N

Long 70° 04' E

Alt 8 m

**RUSSIAN
FEDERATION**



MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Pavel Orekhov, orekhov.eci@gmail.com

PART OF

TSP (Thermal State of Permafrost)

CALM (Circumpolar Active Layer Monitoring)

GTN-P (Global Terrestrial Network - Permafrost)

GCW (Global Cryosphere Watch)



Nadym



Conifer forest

MEASUREMENTS

Atmosphere (meteorology) Temperature.

Atmosphere (composition)

Hydrosphere Water table depth.

Cryosphere

Snow depth and density. Permafrost temperature and active layer thickness in different landscapes, cryogenic processes, ground temperature profile down to the bed rock (borehole).

Pedosphere

Soil water holding capacity (%), soil bulk density, amount of soil organic matter, soil nutrient concentrations, soil chemical characteristics.

Biosphere

Moss and lichen ground cover ground vegetation species characterization, litterfall, biodiversity.

Fluxes CH₄

Other

Field campaigns during 2009-2017: annual permafrost intensive works at the station, site and boreholes surveys, temperature data collecting. During 1971-2009: same, unregular. Hosting intensive field studies, development of novel instrumentation.

Main infrastructures

No permanent buildings.

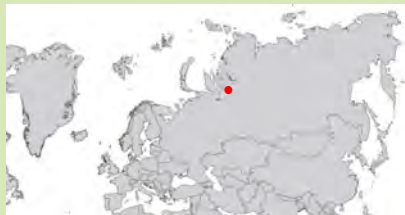
Active since 1971

Lat 65° 19' N

Long 72° 52' E

Alt 22 m

**RUSSIAN
FEDERATION**



MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Olga Ponomareva, o-ponomareva@yandex.ru

PART OF

TSP (Thermal State of Permafrost)

CALM (Circumpolar Active Layer Monitoring)

GTN-P (Global Terrestrial Network - Permafrost)

GCW (Global Cryosphere Watch)



Urengoy Forest-Tundra



MEASUREMENTS

Atmosphere (meteorology) Temperature.

Atmosphere (composition)

Hydrosphere Water table depth.

Cryosphere Snow depth and density. Permafrost temperature and active layer thickness in different landscapes, cryogenic processes, ground temperature profile down to the bed rock (bore hole).

Pedosphere Soil water holding capacity (%), soil bulk density, amount of soil organic matter, soil water content, soil nutrient concentrations, soil chemical characteristics.

Biosphere Moss and lichen ground cover, ground vegetation species characterization, litterfall, biodiversity.

Fluxes CH₄

Other

Field campaigns during 2005-2017: annual permafrost intensive works at the station, site and boreholes surveys, temperature data collecting. During 1974-2004: similar, but unregular. Hosting intensive atmospheric field studies and development of novel, instrumentation.

Main infrastructures

No permanent buildings.

Active since 1974

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Dmitry Drozdov, ds_drozdov@mail.ru

PART OF

- TSP (Thermal State of Permafrost)
- CALM (Circumpolar Active Layer Monitoring),
- GTN-P (Global Terrestrial Network - Permafrost),
- GCW (Global Cryosphere Watch)

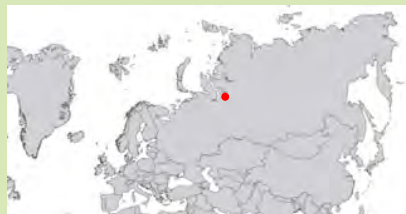
Southern forest tundra

Lat 66° 18' N

Long 76° 54' E

Alt 61 m

**RUSSIAN
FEDERATION**





Urengoy Tundra

Southern tundra

MEASUREMENTS

Atmosphere (meteorology) Temperature.

Atmosphere (composition)

Hydrosphere Water table depth.

Cryosphere Snow depth and density. Permafrost temperature and active layer thickness in different landscapes, cryogenic processes, ground temperature profile down to the bed rock (bore hole).

Pedosphere Soil water holding capacity (%), soil bulk density, amount of soil organic matter, soil water content, soil nutrient concentrations, soil chemical characteristics.

Biosphere Ground vegetation species characterization, litterfall, biodiversity.

Fluxes CH₄

Other

Field campaigns during 2005-2017: annual permafrost intensive works at the station, site and boreholes surveys, temperature data collecting. Hosting intensive atmospheric field studies and development of novel instrumentation.

Main infrastructures

No permanent buildings.

Active since 1974

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Dmitry Drozdov, ds_drozdov@mail.ru

PART OF

TSP (Thermal State of Permafrost)

CALM (Circumpolar Active Layer Monitoring)

GTN-P (Global Terrestrial Network - Permafrost)

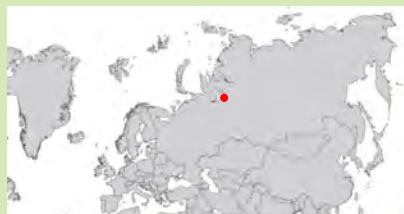
GCW (Global Cryosphere Watch)

Lat 67° 18' N

Long 76° 42' E

Alt 33 m

**RUSSIAN
FEDERATION**





Kursk Biosphere Station



MEASUREMENTS

Atmosphere (meteorology)	Hourly wind speed and direction, ambient pressure, air temperature, relative humidity (at 2 m height). Solar radiation.
Atmosphere (composition)	Aerosol quantity and quality. Mass concentration. Chemical composition of atmospheric aerosol in summer and winter time.
Hydrosphere	Precipitation. Chemical composition of rainfall - ICP MS. Geochemistry of surface water
Cryosphere	Snow reserves. Chemical composition of snow cover - ICP MS.
Pedosphere	Soil temperature and moisture at 5 cm Soil chemistry.
Biosphere	Forest and forest-steppe ecotones productivity. Aboveground and belowground phytomass, litter storage, plant species richness and projective cover, LAI. Forest state and damage changes, vegetation and epiphytes dynamics. Chemical composition of vegetation.
Fluxes	Deposition of heavy metals in soils and plant tissues (seasonal). CO ₂ , CH ₄ and N ₂ O soil emissions. Velocity and direction of geochemistry migration.
Other	Also measurements on farmland.
Main infrastructures	Isolated catchment, laboratory and living facilities.
Active since	1984

MORE INFO & DATA & CONTACT

Website	http://kursk.igras.ru
Data	Web site under construction
Contact	Station manager: Lunin Vsevolod, vsevolod-lunin@yandex.ru Scientific adviser: Karelin Dmitry, dkarelin7@gmail.com

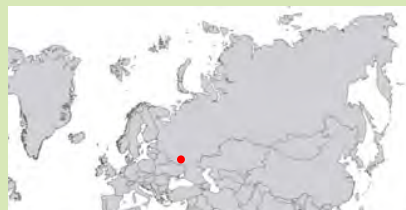
PART OF

ICP IM-UNECE (International Cooperative Programme on Integrated Monitoring of Air Pollution Effects on Ecosystems)

Oak forest-steppe + farmland

Lat 51° 32' N
Long 36° 05' E
Alt 243 m

**RUSSIAN
FEDERATION**





Borok-IPE-RAS: Borok Geophysical Observatory



Hemiboreal mixed forest

MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, ambient pressure, temperature, relative humidity, solar radiation. Wind and temperature altitude profiles up to 800 m.

Atmosphere (composition) Aerosol number concentration, atmospheric ions, radon activity. Air electric field, air electric current, lightnings.

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Also advanced characterization of atmospheric turbulence inside the surface layer (e.g. below canopy). This is the unique middle latitude geophysical observatory in the European part of Russia, making the continuous measurements of different geophysical fields under conditions of “gEOelectromagnetic preservation area”. Hosting intensive field studies including captive balloon measurements, inter-platform calibrations and verifications, as well as development of novel instrumentation.

Main infrastructures

Permanent building laboratory, computing cottage and instrument pavilions. Accommodation facilities.

Active since 1957

MORE INFO & DATA & CONTACT

Website <http://www.brk.adm.yar.ru>

Data <http://geodata.borok.ru>

Contact Sergey Anisimov, anisimov@borok.yar.ru

PART OF

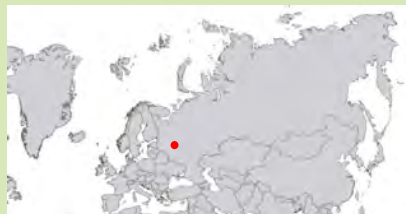
INTERMAGNET (International Real-time Magnetic Observatory Network)

Lat 58° 2' N

Long 38° 7' E

Alt 100 m

**RUSSIAN
FEDERATION**





Zvenigorod Scientific Station



Hemiboreal mixed forest

Lat 55° 41' N
Long 36° 46' E
Alt 170 m

**RUSSIAN
FEDERATION**

MEASUREMENTS

Atmosphere (meteorology) Air temperature, humidity, wind speed and direction, solar radiation.

Atmosphere (composition) CO, CH₄, NO₂, O₃, H₂O, aerosol number concentration, size distribution, optical depth.

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Acoustic sounding of ABL, monitoring of physical parameters of middle and higher atmosphere.

Main infrastructures

This station is the main experimental base of A.M.Obukhov Institute of Atmospheric Physics RAS designed for different kind of atmospheric research. It contains 3 laboratory buildings and optical polygon for year-round work of 120 employees, can be adopted for ecosystem studies, flux observations etc.

Active since 1956



MORE INFO & DATA & CONTACT

Website No separate web-site

Data Data is available upon request

Contact Dr. Andrey Skorokhod, skorokhod@ifaran.ru

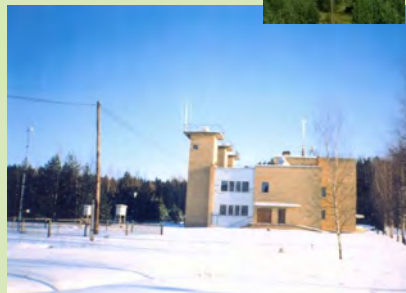
PART OF

Aeronet (Aerosol Robotic Network)

NDACC (Network for the Detection of Atmospheric Composition Change)

BSRN (Baseline Surface Radiation Network)

Mosecomonitoring (Moscow municipal network for air quality control)





Kislovodsk High Mountain Station



High-elevation

MEASUREMENTS

Atmosphere (meteorology)	Temperature, ambient pressure, wind speed and direction. Solar radiation (UV-B).
Atmosphere (composition)	Aerosol quantity, aerosol quality (regular expeditions). Concentration of O ₃ , CO, NO _x . Concentration VOC, CH ₄ (regular expeditions). Total content and vertical gradient of O ₃ , NO ₂ . Total content of H ₂ O, CO.
Hydrosphere	Rainfall.
Cryosphere	Snow depth.
Pedosphere	Total content of H ₂ O, CO.
Biosphere	Control of biodiversity.

Fluxes

Other

Main infrastructures

The duplicating measurements in the nearest (25km) resort city Kislovodsk (860m under s.l.)

Active since 1978

MORE INFO & DATA & CONTACT

Website	http://khms.ru
Data	Request from contact
Contact	Irina Senik, senik_ia@list.ru, sia@ifaran.ru

PART OF

"Fundamental sciences for medicine", program of the Presidium of the Russian Academy of Sciences

TOAR (Tropospheric Ozone Assessment Report)

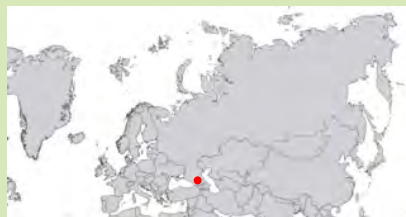
International ozonometric station № 282 (OCO, BREWER)

Lat 43°41' N

Long 42°39' E

Alt 2096 m

**RUSSIAN
FEDERATION**





FTIR Spectrometry Site
Dept. of Atmospheric Physics
Saint-Petersburg State University



Urban

MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, ambient pressure, temperature, and relative humidity.

Atmosphere (composition) Concentration of CO, CO₂, O₃, NO_x, CH₄.

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Main infrastructures

Active since 2013

MORE INFO & DATA & CONTACT

Website troll.phys.spbu.ru

Data Request from contact

Contact Yuriy Timofeev, y.timofeev@spbu.ru

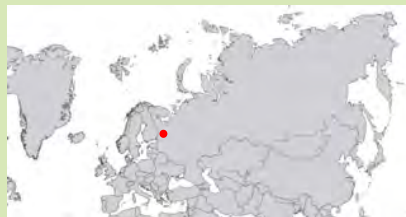
PART OF

Lat 59° 52' N

Long 29° 49' E

Alt 20 m

**RUSSIAN
FEDERATION**





Aktru Geographical Station



MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, ambient pressure, temperature, and relative humidity.

Atmosphere (composition)

Hydrosphere Amount of run-off.

Cryosphere Glaciers dynamic, snow depth and water content.

Pedosphere Periodic monitoring.

Biosphere Periodic monitoring.

Fluxes

Other

Geographical educational and scientific station "Aktru" belongs to the National Research Tomsk State University. The main aims are to study climate-driven glaciers dynamics, hydrological regimes, landscape science, and geomorphology.

Main infrastructures

Ultrasonic automatic meteorological station AMK-03, hydrological equipment, surveying equipment.

Active since 1956

MORE INFO & DATA & CONTACT

Website www.tsu.ru

Data Existing databases contain records on climate, hydrology, and glacier dynamics. Research conducted on the station was published in numerous international peer reviewed journals, including Science and Nature. Data and research results available on the web sites Institute of Geography RAS (<http://webgeo.ru/index.php?r=47&page=1&page=2>, <http://webgeo.ru/index.php?r=97&page=1&id=714>, <http://webgeo.ru/index.php?r=50&page=2&page=1>)

Contact Sergey Kirpotin, kirp@mail.tsu.ru
Vladimir Eremeev, akturu.tsu@ya.ru

PART OF

INTERACT (International Network for Terrestrial Research and Monitoring in the Arctic)
SecNET (The international consortium for understanding and Predicting Societally-relevant Changes in Siberia in a Global Context)

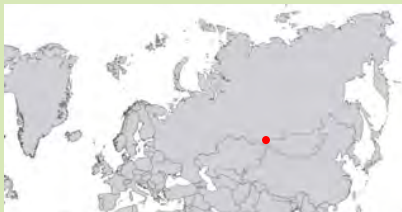
Highmountain belt with alpine landscapes and glaciers, highmountain tundra, forest belt, steppe belt on the mountain slopes.

Lat 50°05' N

Long 87°46' E

Alt 2150 m

**RUSSIAN
FEDERATION**





Novosibirsk Magnetic Ionospheric Station



Forest steppe

MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, ambient pressure, temperature, and relative humidity.

Atmosphere (composition) Concentration of TSP, PM1, PM10, OC, EC, multielement and ionic composition of atmospheric aerosol, total protein.

Hydrosphere Amount and chemical composition of rainfall.

Cryosphere Snow depth.

Pedosphere

Biosphere

Fluxes

Other

Magnetic field monitoring.

Main infrastructures

Rural site.

Active since 1996

MORE INFO & DATA & CONTACT

Website

Data Request from contact

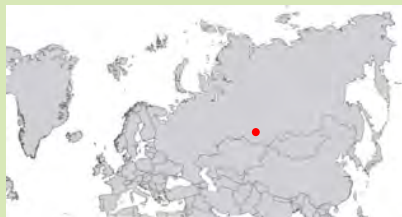
Contact General:
Valerii Makarov, makarov@kinetics.nsc.ru
Data:
Svetlana Popova, popova@kinetics.nsc.ru

Lat 54° 50' N

Long 83° 16' E

Alt 164 m

**RUSSIAN
FEDERATION**



PART OF



Fonovaya observatory



MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, ambient pressure, temperature, and relative humidity.

Atmosphere (composition) Aerosol size distribution.
Concentration of CO₂, CH₄, NO, NO₂, SO₂, CO, O₃.

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes CO₂, CH₄, static chamber technique.

Other

Main infrastructures

Tower for meteo and air composition.

Active since 2015

MORE INFO & DATA & CONTACT

Website lop.iao.ru

Data NRT vizualization

Contact Mikhail Arshinov, michael@iao.ru

PART OF



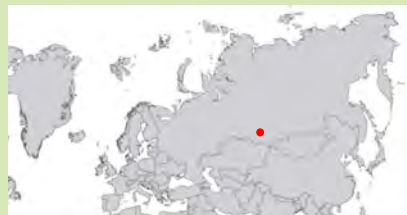
Mixed boreal forest+river

Lat 56° 26' N

Long 84° 04' E

Alt 80 m

**RUSSIAN
FEDERATION**





Okovskiy Forest RU-FYO:Bog



Natural bog

MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, ambient pressure, temperature, and relative humidity. Solar radiation (PAR, UV, longwave, 4-components).

Atmosphere (composition) Concentration of CO₂, H₂O.

Hydrosphere Rainfall, watertable level.

Cryosphere

Pedosphere

Biosphere

Fluxes Momentum, heat, CO₂, H₂O.
Micrometeorological and/or chamber-based methods.

Other

Main infrastructures

Instrumental tripod of 3m.

Active since 1998-2000, 2015-

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Juliya Kurbatova, kurbatova.j@gmail.com

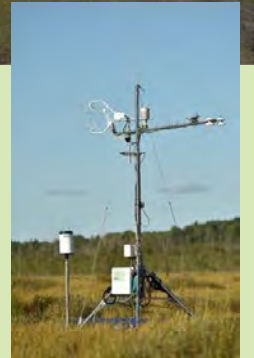
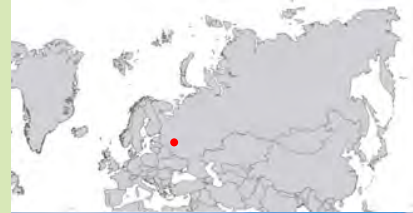
PART OF

Lat 56° 27' N

Long 32° 55' E

Alt 260 m

**RUSSIAN
FEDERATION**





Okovskiy Forest RU-FYO



Wet Spruce Stand

MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, ambient pressure, air temperature and relative humidity. Solar radiation (PAR, longwave, shortwave).

Atmosphere (composition)

Hydrosphere

Cryosphere Snow depth.

Pedosphere Temperature, water content, ground water level.

Biosphere Forest ecophysiology and productivity.

Fluxes Momentum, Heat, CO₂, H₂O, CH₄.

Other

Another tower (42 m) with new equipment at a distance of 70 meters was run in 2015.

Main infrastructures

The site is located in the territory of the Central Forest Biosphere State Reserve. Instrumental tower of 29 m for meteo and fluxes.

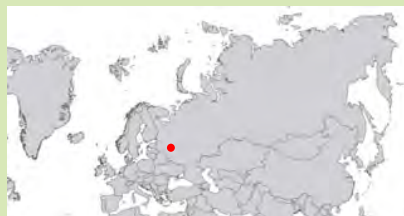
Active since 1998

Lat 56° 28' N

Long 32° 55' E

Alt 265 m

**RUSSIAN
FEDERATION**



MORE INFO & DATA & CONTACT

Website

Data European Fluxes Database Cluster:
<http://gaia.agraria.unitus.it/> and FLUXNET2015

Dataset: <http://fluxnet.fluxdata.org/data/>

Contact Andrej Varlagin, varlagin@sevin.ru

PART OF





Vasyuganie

MEASUREMENTS

Atmosphere (meteorology) Ambient pressure, temperature, and relative humidity.

Atmosphere (composition)

Hydrosphere Bog water level, rainfall.

Cryosphere Snow depth, freeze depth.

Pedosphere Temperature, water content, stratigraphy of the peat deposit, elemental composition of peat, isotope composition of C and N.

Biosphere Peatland ecophysiology and productivity, transformation of plant matter.

Fluxes CO₂, CH₄. Chamber-based methods.

Other

Main infrastructures

Oligotrophic peatlands (5 sites of observations) eutrophic peatlands (3 sites of observation), forests and meadows. Automatic year-round measurements of hydrothermal conditions. Measurement of greenhouse gas emissions during field work in the growing season.

Active since 2002

MORE INFO & DATA & CONTACT

Website <http://www2.imces.ru/en/>

Data Request from contact

Contact Evgeniya Golovatskaya, golovatskaya@imces.ru
Egor Dyukarev, egor@imces.ru

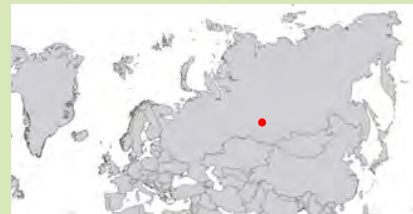
Peatlands, forests, meadows

Lat 56° 98' N

Long 82° 61' E

Alt 120 m

**RUSSIAN
FEDERATION**



PART OF



IMCES Geophysical Observatory



MEASUREMENTS

Atmosphere (meteorology)	Weather conditions, wind speed and direction, pressure, temperature (surface and boundary layer profile), and humidity. Solar radiation (sunshine duration, global, PAR, and UV irradiances).
Atmosphere (composition)	Aerosol quantity and quality (detailed), total ozone column, surface concentrations of trace gases, including radon.
Hydrosphere	Precipitation (amount, intensity, and duration).
Cryosphere	Snow depth.
Pedosphere	Soil temperature (ground surface and depth profile), soil dose rates of α , β , and γ radiation, concentration of Hg.
Biosphere	Forest ecosystems, dendroecology.
Fluxes	Momentum, heat, moisture. Atmospheric turbulence (factor, number, diffusivity, etc.).
Other	Cloudiness (all-sky image, form, amount, height). Atmospheric electricity (field intensity, air conductivity). Radioactivity (air dose rates of α , β , and γ radiation). Optical properties (visibility, total scattering and backscattering coefficients, spectral transmittance and aerosol optical depth).

Main infrastructures

Roof and surface observation platforms, instrumental towers of 10 and 30 m (up to 40 m in prospect).

Active since 2006 (meteorological observations since 1994).

MORE INFO & DATA & CONTACT

Website	www.imces.ru (website of IMCES GO is in working out).
Data	Visualization and download (nowadays on demand, in prospect easy approach).
Contact	Sergei Smirnov, smirnov@imces.ru

PART OF

WOUDC (in prospect)

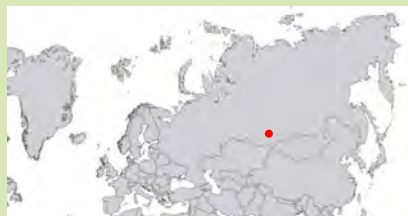
Urban forest + Suburb

Lat 56°28' N

Long 85°03' E

Alt 167 m

**RUSSIAN
FEDERATION**





Siberian Lidar Station

MEASUREMENTS

Atmosphere (meteorology)

Vertical profiles of temperature at 10-70 km.
Vertical profiles of ozone at 5-40 km.
Total ozone.

Atmosphere (composition)

Vertical profiles of aerosol backscattering coefficient at 5-30 km.

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Main infrastructures

Complex of lidars with receiver mirrors 2.2, 0.5, and 0.3 m in diameter and with a set of laser sources, generating radiation in wavelength range of 299-1064 nm. This makes it possible to employ different sensing methods to measure ozone, aerosol, and temperature in different altitude ranges in the troposphere and stratosphere (up to the height of 70 km, in the case of temperature measurements).

Active since 1994

MORE INFO & DATA & CONTACT

Website <http://www.iao.ru/en/resources/equip/sls>

Data Request from contact

Contact Alexey Nevzorov, nevzorov@iao.ru

PART OF



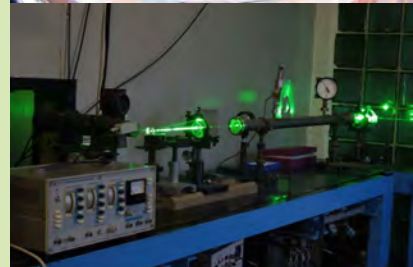
Mixed forest

Lat 56° 28' N

Long 85° 05' E

Alt 168 m

**RUSSIAN
FEDERATION**





Tomsk, site Kireevsk



Boreal mixed forest

MEASUREMENTS

Atmosphere (meteorology)

**Atmosphere
(composition)** Aerosol optical depth.
Column water vapour.

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Spectral characterization of solar radiation.

Main infrastructures

Active since 2011

MORE INFO & DATA & CONTACT

Website

Data <http://aeronet.gsfc.nasa.gov>; sms@iao.ru

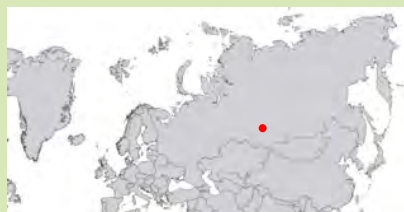
Contact Iurii Turchinovich, tus@iao.ru

Lat 56° 25' N

Long 84° 03' E

Alt 130 m

**RUSSIAN
FEDERATION**



PART OF



Tomsk, site Tomsk



Boreal, Urban

MEASUREMENTS

Atmosphere (meteorology)

Atmosphere (composition) Aerosol optical depth.
Column water vapour.

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Spectral characterization of solar radiation.

Main infrastructures

Active since 2011

MORE INFO & DATA & CONTACT

Website www.iao.ru

Data Request from contact

Contact Iurii Turchinovich, tus@iao.ru

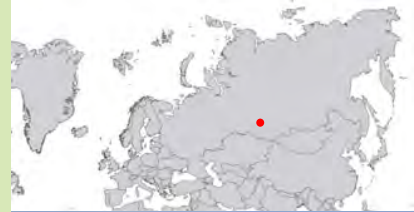
PART OF

Lat 56° 28' N

Long 85° 02' E

Alt 130 m

**RUSSIAN
FEDERATION**





Irkutsk, site Tory



Tunka valley

MEASUREMENTS

Atmosphere (meteorology) Ambient pressure, temperature, and relative humidity.

Atmosphere (composition) Spectral aerosol optical depth (AOD), inversion products, and precipitable water in diverse aerosol regimes.

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Nightglow emissions measurements.

Main infrastructures

Geophysical Observatory.

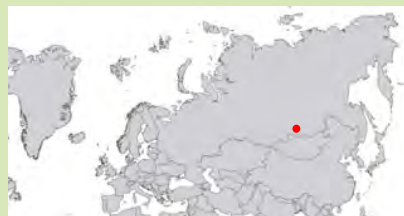
Active since

Lat 51° 48' N

Long 103° 04' E

Alt 670 m

**RUSSIAN
FEDERATION**



MORE INFO & DATA & CONTACT

Website <http://aeronet.gsfc.nasa.gov>,
<http://atmos.iszf.irk.ru>

Data <http://aeronet.gsfc.nasa.gov>

Contact Mikhail Taschilin, miketash@iszf.irk.ru

PART OF

AERONET (Aerorol Robotic Network)



Mukhrino Field Station



MEASUREMENTS

Atmosphere (meteorology)

Temperature profile, relative humidity, wind direction, wind speed (+2m, +10 m), atmospheric pressure, radiation (solar, PAR, net).

Atmosphere (composition)

Concentration of CO₂, H₂O, CH₄.

Hydrosphere

Precipitation (liquid, snow), water table depth, amount and chemical composition of runoff, evaporation and evapotranspiration from different landscapes.

Cryosphere

Snow depth and snow water content.

Pedosphere

Soil bulk density, amount of SOC, SWC, soil temperature profile, soil solution samplings (e.g. DOC, nutrients), soil chemical characteristics (pH, CEC, C and N content), characteristics of SOM (e.g. lignin, sugars, cellulose, proteins), C and N concentration in peat, enzyme concentrations in peat layers.

Biosphere

Tree species distribution, ground vegetation characterization, aboveground biomass, dendrochronological measurements, biodiversity of vascular plants, bryophytes, fungi, community structure and fruiting dynamic of fungi, mammals, birds, and others.

Fluxes

CO₂ and CH₄ surface flux (manual and automatic chambers). Net ecosystem CO₂, water and heat exchange (EC).

Other

Hosting intensive field studies, focused campaigns to determine the connections between the fluxes and environmental and ecosystem factors.

Main infrastructures

Accommodation facilities.

Active since 2009

MORE INFO & DATA & CONTACT

Website <http://www.mukhrinostation.com>

Data <https://mukhrinostation.com/virtual-access/>

Contact Elena Lapshina (Khanty-Mansiysk)
e_lapshina@ugrasu.ru

PART OF

Several national research programmes, INTERACT-2

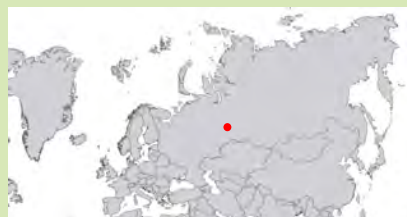
Sub-arctic, natural bog

Lat 60° 32' N

Long 68° 25' E

Alt 60 m

**RUSSIAN
FEDERATION**





Lazurnaya Monitoring Geothermal Point



Hemiboreal, Tundra

MEASUREMENTS

Atmosphere (meteorology) Air temperature.

Atmosphere (composition)

Hydrosphere

Cryosphere Soil temperature in the bore holes 0-5 m.

Pedosphere

Biosphere Biodiversity.

Fluxes

Other

Field campaign during 1993-2015: active layer dynamics measurements, cryogenic processes monitoring, technogenic impact study, cryogenic landslides study.

Main infrastructures

Active since 2011

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Sergei Serikov grampus@mpi.ysn.ru

PART OF

Lat 63° 03' N

Long 138° 49' E

Alt 1160 m

**RUSSIAN
FEDERATION**



Chyappara Monitoring Geothermal Point



Tundra

MEASUREMENTS

Atmosphere (meteorology) Air temperature.

Atmosphere (composition)

Hydrosphere

Cryosphere Soil temperature in the bore holes 0-5 m.

Pedosphere

Biosphere Biodiversity.

Fluxes

Other

1993-2015 active layer dynamics measurements, cryogenic processes monitoring, technogenic impact study, cryogenic landslides study.

Main infrastructures

No permanent buildings.

Active since 2012

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Sergei Serikov, grampus@mpi.ysn.ru

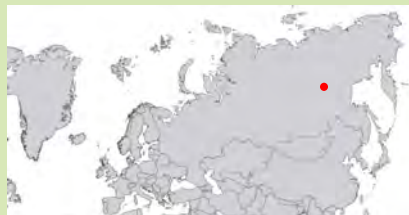
PART OF

Lat 62° 08' N

Long 131° 18' E

Alt 234 m

**RUSSIAN
FEDERATION**





TMGP Tajezhka 345



MEASUREMENTS

Atmosphere (meteorology) Air temperature.

Atmosphere (composition)

Hydrosphere

Cryosphere Soil temperature in the bore holes 0-5 m.

Pedosphere

Biosphere Biodiversity.

Fluxes

Other

Field campaigns during 1993-2015: active layer dynamics measurements, cryogenic processes monitoring, technogenic impact study, cryogenic landslides study.

Main infrastructures

No permanent buildings.

Active since 2007

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Sergey Serikov, grampus@mpi.ysn.ru

PART OF



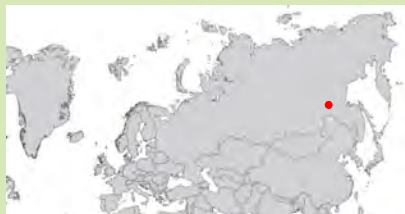
Sub-arctic tundra

Lat 57° 41' N

Long 125° 22' E

Alt 1255 m

**RUSSIAN
FEDERATION**





Lookuchakit Monitoring Geothermal point



Mixed forest

MEASUREMENTS

Atmosphere (meteorology) Air temperature.

Atmosphere (composition)

Hydrosphere

Cryosphere Soil temperature in the bore holes 0-5 m.

Pedosphere

Biosphere Biodiversity.

Fluxes

Other

Main infrastructures

No permanent buildings.

Active since 2011

MORE INFO & DATA & CONTACT

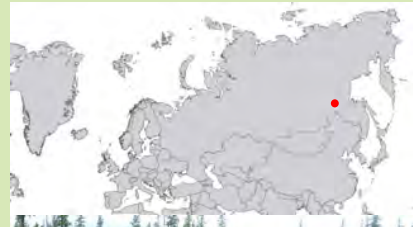
Website

Data Request from contact

Contact Sergei Serikov, grampus@mpi.ysn.ru

PART OF

Lat 56° 49' N
Long 124° 45' E
Alt 792 m
**RUSSIAN
FEDERATION**





Seida-Vorkuta

MEASUREMENTS

Atmosphere (meteorology) Temperature, relative humidity, wind speed, precipitation, solar radiation.

,Atmosphere (composition)

Hydrosphere

Cryosphere Snow depth, active layer depth, ground ice content.

Pedosphere High-resolution soil maps, SOM content, C and N content, bulk ¹⁴C age, macrofossil analysis, SWC, temperature profile, nutrient and DOC concentrations, isotopic ratios of C and N in SOM, concentrations of CO₂, CH₄ and N₂O in soil pore gas, isotopic ratios of CH₄ and N₂O in soil pore gas, gross N mineralization and nitrification rates.

Biosphere High-resolution land cover map, vegetation composition, above ground biomass, leaf area index, composition and activity of microbial population (nitrifiers and denitrifiers).

Fluxes CO₂, CH₄ and N₂O fluxes by manual chambers, soil microbial respiration, isotopic composition of CO₂, CH₄ and N₂O emitted, ¹⁴C age of CO₂ emitted. CO₂ and CH₄ fluxes by eddy covariance in 2008.

Other

Warming experiment with open top chambers on peat plateaus and tundra heath from 2012, CALM-site on peat plateau from 2012.

Main infrastructures

Simple accommodation facilities for a small group, laboratory and instrument cabin.

Active since 2007

MORE INFO & DATA & CONTACT

Website <http://page21.org/science-in-page21/field-sites/23-about/field-sites/65-vorkuta>

Data Available on request.

Contact Christina Biasi, christina.biasi@uef.fi
Maija Marushchak, majja.marushchak@uef.fi
Dmitry Kaverin, dkav@mail.ru

PART OF

NOCA (Towards constraining the circumpolar nitrous oxide budget).
CAPTURE (Carbon dynamics across Arctic landscape gradients: past, present and future, Academy of Finland/RFBR, 2018-2020)
Yedoma-N (Yedoma – an overlooked source of N₂O from the Arctic?, Academy of Finland, 2016-2020)
COUP (Constraining uncertainties in the permafrost-climate feedback, Academy of Finland, 2015-2019)
NordFORSK -JPI Climate, 2014-2017.

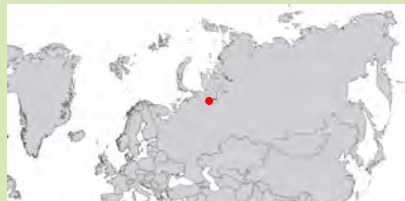
Permafrost peat plateaus, wetlands and tundra heath in subarctic tundra with discontinuous permafrost.

Lat 67° 03' N

Long 62° 55' E

Alt 100 m

**RUSSIAN
FEDERATION**





Donskoy

MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, atmospheric pressure, temperature, relative humidity and precipitation.

Atmosphere (composition)

Hydrosphere River water level.

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Main infrastructures

Berth on the river Don. Instrument: radar level transmitter ULM-31A1 by Elemer UFA.

Active since 2013

MORE INFO & DATA & CONTACT

Website <http://www.ssc-ras.ru/>

Data <http://meteo.ssc-ras.ru/>

Contact Georgy Valov, valov@ssc-ras.ru

PART OF



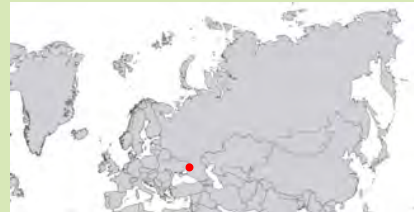
Wetland + River

Lat 47° 06' N

Long 39° 18' E

Alt 3 m

**RUSSIAN
FEDERATION**





Kagalnik



Wetland + river

MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, atmospheric pressure, temperature and relative humidity.

Atmosphere (composition)

Hydrosphere River water level, water temperature and water conductivity.

Cryosphere

Pedosphere

Biosphere Birds and fish.

Fluxes

Other

Main infrastructures

Laboratory and instrument cottage. Accomodation facilities for 15 persons. Instruments: photometer Expert 003 Econix-Expert Ltd, Automated Wet Chemistry Analyzer - San++, Scalar, oil-product analyzer KN-2m pH-meter Hanna.

Active since 2005

MORE INFO & DATA & CONTACT

Website <http://www.ssc-ras.ru/>

Data <http://meteo.ssc-ras.ru/>

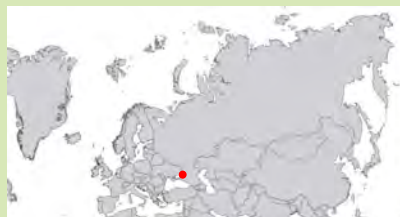
Contact Georgy Valov, valov@ssc-ras.ru

Lat 47° 04' N

Long 39° 18' E

Alt 0 m

**RUSSIAN
FEDERATION**



PART OF



Manych



Dry-steppe + lake

MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, atmospheric pressure, temperature and relative humidity.

Atmosphere (composition)

Hydrosphere

Cryosphere

Pedosphere Soil bulk density, soil water content, soil chemical characteristics, amount of soil organic matter.

Biosphere Fungi, birds and mammals.

Fluxes

Other

Main infrastructures

Laboratory for basic chemical and physical analysis of water, soil and plant material. Accomodation facilities for 15 persons.

Active since 2009

MORE INFO & DATA & CONTACT

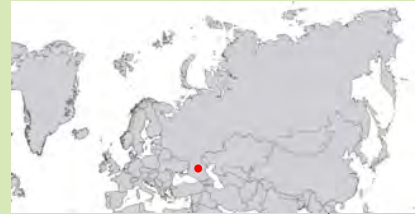
Website <http://www.ssc-ras.ru/>

Data <http://meteo.ssc-ras.ru/>

Contact Georgy Valov, valov@ssc-ras.ru

PART OF

Lat 46° 25' N
Long 42° 42' E
Alt 34 m
**RUSSIAN
FEDERATION**





Vzmorje



Shallow sea

MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, atmospheric pressure, temperature and relative humidity.

Atmosphere (composition)

Hydrosphere Sea water level, water temperature and water conductivity.

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Main infrastructures

Platform in the Taganrog Bay, Solar battery powered station.
Instruments: radar level transmitter ULM-31A1 by Elemer-UFA, salimeter-conductometer SL15-10T produced by OKB Solis.

Active since 2015

MORE INFO & DATA & CONTACT

Website <http://www.ssc-ras.ru/>

Data <http://meteo.ssc-ras.ru/>

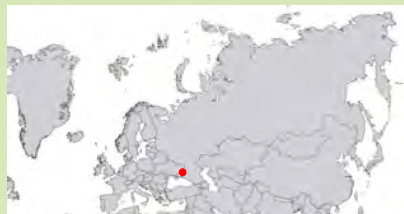
Contact Georgy Valov, valov@ssc-ras.ru

Lat 47° 04' N

Long 39° 09' E

Alt 1.5 m

**RUSSIAN
FEDERATION**



PART OF

Smyichka



MEASUREMENTS

Atmosphere (meteorology) Temperature, relative humidity, wind direction, wind speed, precipitation.

Atmosphere (composition) Aerosol number concentration, atmospheric ions.

Hydrosphere Amount and chemical composition of run-off, stemflow, rainfall.

Cryosphere Snow depth and water content.

Pedosphere Soil bulk density, amount of soil organic matter, soil nutrient concentrations, chemical characteristics, organic matter.

Biosphere Tree species distribution, density, volume and height.
Ground vegetation species characterization.
Biodiversity of vascular plants, mammals, birds.

Fluxes Wet deposition: main ions (Na, Ca, K, Mg, SO₄, Cl), trace metals (Pb, Zn, Cd, Cu).
Dry depositions: dust and connected trace metals.

Other Paleogeographic, socio-economic researches. Assessment of tsunami hazard.

Main infrastructures

Laboratory building, residential and auxiliary premises.

Active since 1972

MORE INFO & DATA & CONTACT

Website <http://tigidvoru/nauchno-eksperimentalnaya-baza-smyichka/>

Data Request from contact

Contact Kirill Ganzei, geo2005.84@mail.ru

PART OF

UNEP NOWPAP POMRAC (United Nations Environment Programme, Northwest Pacific Action Plan, Pollution Monitoring Regional Activity Center)

Sub-boreal + lake + sea + mining

Lat 44° 20' N

Long 135° 49' E

Alt 2 m

RUSSIAN
FEDERATION



KBPGI FEB RAS Field base Bolgyt



Subarctic permafrost + volcano

MEASUREMENTS

Atmosphere (meteorology) Temperature, relative humidity, wind direction, wind speed, precipitation.

Atmosphere (composition)

Hydrosphere

Cryosphere Snow depth.

Pedosphere Amount of soil organic matter, soil water content.

Biosphere Biodiversity: vascular plants, bryophytes mammals, birds, other fauna.

Fluxes

Other

Main infrastructures

Permanent building, laboratories.

Active since

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact Alexey Tokranov, tok_50@mail.ru

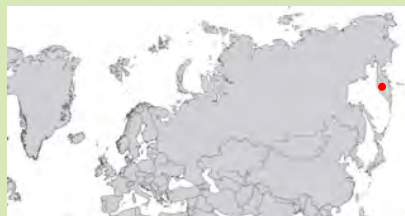
PART OF

Lat 55° 55' N

Long 158° 41' E

Alt 480 m

**RUSSIAN
FEDERATION**





International Ecological Education Center Istomino



MEASUREMENTS

Atmosphere (meteorology) Temperature, wind speed, humidity.

Atmosphere (composition)

Hydrosphere Chemical composition of Selenga river.

Cryosphere

Pedosphere

Biosphere Dendrochronological measurements.

Fluxes

Other

Different measurements over Lake Baikal and Selenga river delta

Main infrastructures

Facilities for basic chemical and physical analyses of water, soil and plant material. Boats and vehicles.

Active since 2002

MORE INFO & DATA & CONTACT

Website <http://www.binm.ru/istomino/en/>

Data Request from contact

Contact Alexander Ayurzhanaev,
aaayurzhanaev@yandex.ru

PART OF



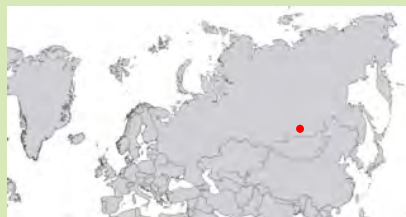
Marshland +boreal forest +Lake Baikal

Lat 52° 08' N

Long 106° 18' E

Alt 470 m

**RUSSIAN
FEDERATION**





Elbrus Station



High Mountain

MEASUREMENTS

Atmosphere (meteorology) Air temperature, wind speed and direction.
Precipitation.

Atmosphere (composition)

Hydrosphere

Cryosphere

Snow depth and water equivalent, metamorphosis of snow cover throughout winter seasons, snow avalanche activity.

Pedosphere

Biosphere

Fluxes

Other

Station's data archive includes data on glacier change, snow avalanche and debris flow events since 1950s in the Central Caucasus.

Main infrastructures

The station facilities include a student accommodation building with dormitories, lecture room and dining room, as well as a staff accommodation building with a few apartments available for visiting researchers. A 4WD UAZ minibus with driver is available on request. Every year the station hosts summer field courses and winter scientific expeditions for students as well as researchers with specific field projects (in total more than 50 visitors per year). At the territory of the station there is a special test site with automatic eather station installment.

Active since 1957

MORE INFO & DATA & CONTACT

Website <http://www.eng.geogr.msu.ru/practics/stations/elbrus/>

Data Request from contact

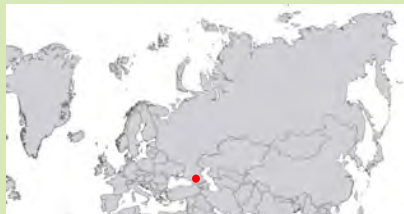
Contact Dmitry Oleynikov snow1dozor@yandex.ru

Lat 43°15' N

Long 42°28' E

Alt 2326 m

RUSSIAN
FEDERATION



PART OF



Khibiny Station



Taiga-tundra ecotone

MEASUREMENTS

Atmosphere (meteorology) Wind speed, gust and direction, ambient pressure, temperature, and relative humidity, solar and net radiation. Rainfall.

Atmosphere (composition)

Hydrosphere

Cryosphere Snow depth and water content, metamorphosis of snow cover throughout winter seasons.

Pedosphere Temperature.

Biosphere

Fluxes

Other

Periodic measurements done by visiting research groups also might be available through the station's data archive.

Main infrastructures

The station facilities include a student accommodation building with dormitories, lecture room, laboratory, and dining room, as well as a staff accommodation building with a few flats available for visiting researchers. A minibus and a 4 WD truck with drivers are available on request. Every year the station hosts summer field courses and winter scientific expeditions for students as well as researchers with specific field projects (in total more than 200 visitors per year). At the territory of the station there is a special test site with automatic weather station installment.

Active since 1948

MORE INFO & DATA & CONTACT

Website <http://www.eng.geogr.msu.ru/practics/stations/khibiny/>

Data Available upon request

Contact Scientific and general inquiries:
Yulia Zaika, yzaika@inbox.ru

PART OF

INTERACT (International Network for Terrestrial Research and Monitoring in the Arctic)

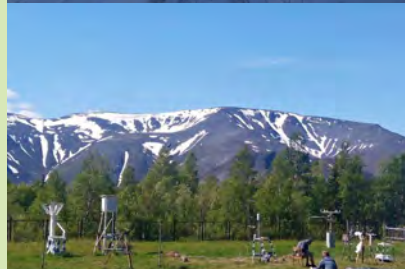
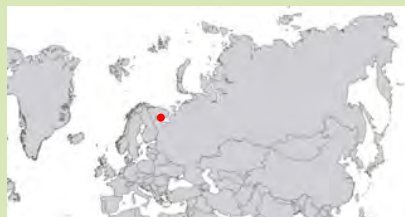
ISIRA of IASC (International Science Initiative in the Russian Arctic)

Lat 67°38' N

Long 33°43' E

Alt 320 m

**RUSSIAN
FEDERATION**





Krasnovidovo Station



MEASUREMENTS

Atmosphere (meteorology) Wind speed, air pressure, temperature, and relative humidity. Rainfall.

Atmosphere (composition)

Hydrosphere Water temperature, clarity, conductance, dissolved oxygen, pH, major ions, ortophosphates, total phosphorus, cholophyll a, nitrates, ammonia, COD, water color, permanganate index, turbidity, silica.

Cryosphere Snow and ice depth during winter period.

Pedosphere

Biosphere Phytoplankton, Zooplankton

Fluxes Methane flux from water

Other

Main infrastructures

Station operates year-round providing research and teaching facilities consisting of the Main building with laboratories, a 17 person dormitory, kitchen/dining facilities, and summer 8-person cabin. There are separate men and women washrooms, and one bathroom with shower. There are two 30 HP motor boats available for visitors. Every year students have field summer courses at the station during June and July. Other time station hosts researchers from different organizations, who study freshwater ecosystems and its basic components.

Active since 1945

MORE INFO & DATA & CONTACT

Website <http://www.eng.geogr.msu.ru/practics/stations/krasn/>

Data Upon request

Contact Scientific and general inquires:
Oxana Erina, oxana.erina@geogr.msu.ru

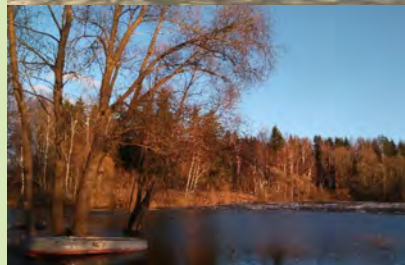
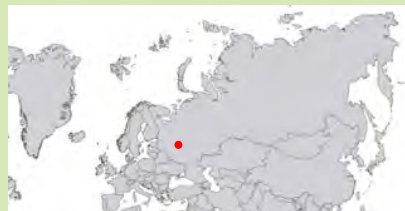
Eutrophic reservoir

Lat 55°34' N

Long 35°51' E

Alt 183 m

**RUSSIAN
FEDERATION**



PART OF



Listvyanka



Boreal forest + hilltop

MEASUREMENTS

Atmosphere (meteorology) Wind direction and velocity, temperature, humidity. Precipitation.

Atmosphere (composition) Aerosol quantity. Concentration of SO₂, NO_x, NH₃, O₃, components in PM.

Hydrosphere Amount and chemical composition of rainfall: pH, EC, ammonium, potassium, calcium, sodium, magnesium, sulfate, bicarbonate, chloride, nitrate, nitrite, fluoride, bromide ions - also possible.

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Main infrastructures

Rural site. Hills covered by coniferous and deciduous trees. About 1 km to SW the outskirts of Listvyanka village is situated. Area around the site: hills from 600-900 m height. At the distance 4 km S is a shore of lake Baikal.

Active since 2001

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact General, Dr. prof. Tamara Khodzher, khodzher@lin.irk.ru

Data, Olga Netsvetaeva, r431@lin.irk.ru

Data, Ludmila Golobokova, lg@lin.irk.ru

Data, Natalia Zhuchenko, zhna@lin.irk.ru

PART OF

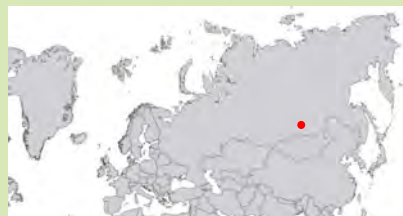
EANET (Acid Deposition Monitoring Network in East Asia)

Lat 51° 51' N

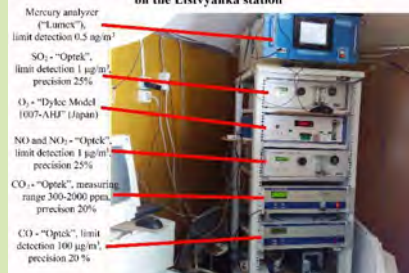
Long 104° 54' E

Alt 700 m

**RUSSIAN
FEDERATION**



Automatic system for air concentration monitoring on the Listvyanka station



Mercury analyzer ("Lumes"), limit detection 0.5 ng/m³
 SO₂ - "Optek", limit detection 1 µg/m³, precision 25%
 O₃ - "Dyke Model 1007-AHF" (Japan)
 NO and NO_x - "Optek", limit detection 1 µg/m³, precision 25%
 CO - "Optek", measuring range 300-2000 ppb, precision 20%
 CO₂ - "Optek", limit detection 100 µg/m³, precision 20%



Mondy



Remote station

MEASUREMENTS

Atmosphere (meteorology) Wind direction and velocity, temperature, humidity. Rainfall.

Atmosphere (composition) Aerosol quantity. Concentration of SO₂, NO_x, NH₃, O₃, components in PM.

Hydrosphere Amount and chemical composition of rainfall: pH, EC, ammonium, potassium, calcium, sodium, magnesium, sulfate, bicarbonate, chloride, nitrate, nitrite, fluoride, bromide ions - also possible.

Cryosphere

Pedosphere pH(H₂O), pH(KCl), exchangeable ions (Na⁺, K⁺, Ca²⁺, Mg²⁺, Al³⁺, H⁺), exchangeable acidity, ECEC, Carbonate, T-C, T-N.

Biosphere Observation of tree decline, description of trees.

Fluxes

Other

Main infrastructures

Sampling site is situated at a slanting top of a mountain 2000 m. above a sea level. In the W and NW direction there is a range with some mountains about 3000 m. No existence of incinerators, domestic heating, parking lots, storage of fuel and agricultural products, daily farm, and many livestock. Mondy village (about 2000 persons) is situated in the N-NW about 8 km.

Active since 2001

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact General:
Dr. prof. Tamara Khodzher, khodzher@lin.irk.ru
Data: Olga Netsvetaeva, r431@lin.irk.ru

PART OF

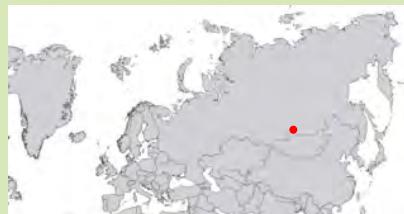
EANET (Acid Deposition Monitoring Network in East Asia)

Lat 51° 40' N

Long 101° 00' E

Alt 2005 m

**RUSSIAN
FEDERATION**





Bolshie Koty



MEASUREMENTS

Atmosphere
(meteorology)

Atmosphere
(composition)

Hydrosphere

Cryosphere

Pedosphere pH(H₂O), pH(KCl), exchangeable ions (Na⁺, K⁺, Ca²⁺, Mg²⁺, Al³⁺, H⁺), exchangeable acidity, ECEC, Carbonate, T-C, T-N.

Biosphere Observation of tree decline, description of trees.

Fluxes

Other

Main infrastructures

Rural site. Hills covered by coniferous and deciduous trees. About 1 km to SE the outskirts of Bolshie Koty village is situated. Area around the site: hills from 600-900 m height. At the distance 0.5 km S is a shore of lake Baikal.

Active since 2001

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact General:
Dr. prof. Tamara Khodzher, khodzher@lin.irk.ru
Data:
Natalia Zhuchenko, zhna@lin.irk.ru

PART OF

EANET (Acid Deposition Network in East Asia)

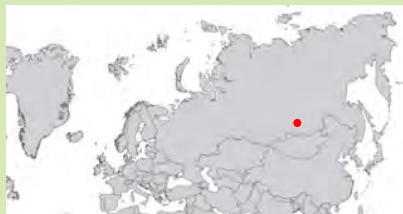
Boreal pine forest + shore of lake Baikal

Lat 51° 51' N

Long 104° 54' E

Alt 500 m

**RUSSIAN
FEDERATION**





Irkutsk Urban Station



Irkutsk city + second forest

MEASUREMENTS

Atmosphere (meteorology) Precipitation amount, wind direction and velocity, temperature, humidity, solar radiation. Since 2002 automatic meteorological station is used.

Atmosphere (composition) Aerosol quantity. Concentration of SO₂, NO_x, NH₃, O₃, components in PM.

Hydrosphere Amount and chemical composition of rainfall: pH, EC, ammonium, potassium, calcium, sodium, magnesium, sulfate, bicarbonate, chloride, nitrate, nitrite, fluoride, bromide ions - also possible.

Cryosphere

Pedosphere pH(H₂O), pH(KCl), exchangeable ions (Na⁺, K⁺, Ca²⁺, Mg²⁺, Al³⁺, H⁺), exchangeable acidity, ECEC, Carbonate, T-C, T-N.

Biosphere Observation of tree decline, description of trees.

Fluxes

Other

Main infrastructures

Urban site.

Active since 2001

MORE INFO & DATA & CONTACT

Website

Data Request from contact

Contact General:
Dr. prof. Tamara Khodzher, khodzher@lin.irk.ru
Data:
Olga Netsvetaeva, r431@lin.irk.ru

PART OF

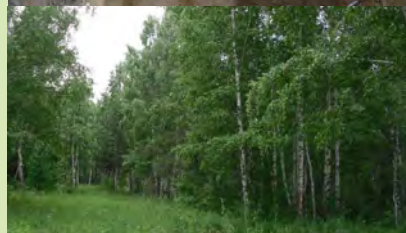
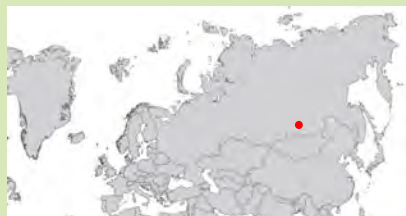
EANET (Acid Deposition Network in East Asia)

Lat 52° 14' N

Long 104° 15' E

Alt 500 m

**RUSSIAN
FEDERATION**





RSHU- Daimische



MEASUREMENTS

Atmosphere (meteorology)

Air temperature, wind characteristics, relative humidity, atmospheric pressure. Radiation. Rainfall.

Atmosphere (composition)

Hydrosphere

Water discharges, water temperatures and levels (1963-). Continuous water temperature and levels measurements at the Oredzh river (2014-). Real-time high frequency measurements at creek (2018-).

Cryosphere

Pedosphere

Soil measurements at different depths and on the surface .

Biosphere

Fluxes

Other

Research are carried out for the air, water and soil environments.

Main infrastructures

Field and laboratory facilities; accomodation and permanent electrical facilities; small 6 boats; water treatment system; access to internet; modern set of instruments for atmospheric, hydrospheric and soil measurements including automatic meteorological "AMK" and hydrological "AGK" stations.

Active since

Since 1963 - student practice, since 2014 – automatic measurements.

MORE INFO & DATA & CONTACT

Website

Data Available under request

Contact Dr. Andrey Saenko, saenko-ag@yandex.ru
Dr. Ilia Gavrillov, i.gavrillov@rshu.ru

PART OF

Russian State Hydrometeorological University (RSHU, St. Petersburg) programme for educational process and research activities)

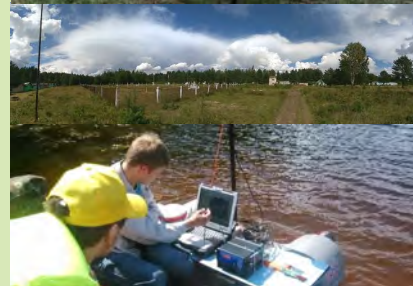
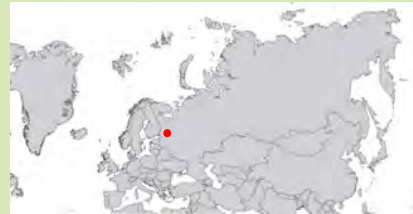
Rural area + mixed forest + river

Lat 59° 19' N

Long 29° 52' E

Alt 105 m

**RUSSIAN
FEDERATION**





Valaam: Educational and Scientific Station



MEASUREMENTS

Atmosphere (meteorology) Air temperature, wind characteristics, relative humidity, atmospheric pressure (2009-). Radiation(2013-)

Atmosphere (composition)

Hydrosphere Water temperature (at surface and different depths); hydrochemical (O₂, CO₂, COD, conductivity, pH, Pt-Co, PO₄, P_{tot}, NH₄, NO₃), hydrophysical and hydrobiological measurements; monitoring for coastal zone and small forest lakes.

Cryosphere

Pedosphere Physical and agrochemical measurements of soils including heavy metals (2008-). Soil temperature in different depths (all year round, 2013-).

Biosphere

Fluxes

Other

Research are carried out for atmosphere (4 sites), pedosphere (6), biosphere (6), and hydrosphere (44 - situated in the coastal zone of the Valaam Archipelago, the Sisjarvi lake as the largest and 10 small forest lakes.

Main infrastructures

Field and laboratory facilities; accomodation and permanent electrical facilities; modern instruments for atmosphere, water, soil and vegetation observations; small 6 boats and moorage; water treatment system; access to internet.

Active since

1998

MORE INFO & DATA & CONTACT

Website <http://valaam.rshu.ru/eng/index.php>

Data Available under request

Contact Anastasiya Stepanova, ab-stepanova@yandex.ru, ab_stepanova@rshu.ru

PART OF

For the Valaam Archipelago - Complex monitoring of land and water environments; Development of geo-information system; Research and conservation of the Ladoga ringed seals and waterbirds; Monitoring of forest photosynthesis; Typization of small forest lakes; etc.

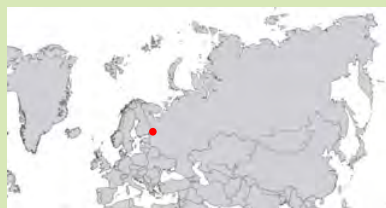
Lake Archipelago

Lat 61° 21' N

Long 30° 53' E

Alt 20 m

**RUSSIAN
FEDERATION**



RSHU-Urban 1



Urban area + city park + river

MEASUREMENTS

Atmosphere (meteorology)

Air temperature, wind characteristics, relative humidity, atmospheric pressure. Short-wave radiation. Rainfall.

Atmosphere (composition)

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Research are carried out for the atmosphere.

Main infrastructures

Automatic information-measurement "POGODA" system with sensors for meteorological and actinometric measurements.

Active since

2014

MORE INFO & DATA & CONTACT

Website

Data Available under request

Contact Dr. Andrey Saenko, saenko-ag@yandex.ru

PART OF

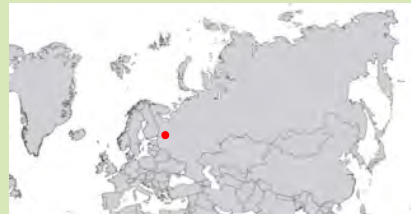
Russian State Hydrometeorological University (RSHU, St. Petersburg) programme for educational process and research activities)

Lat 59° 55' N

Long 30° 25' E

Alt 30 m

**RUSSIAN
FEDERATION**





RSHU-Urban 2



Urban area + city park

MEASUREMENTS

Atmosphere (meteorology)

Air temperature, wind characteristics, relative humidity, atmospheric pressure. Short-wave radiation. Rainfall.

Atmosphere (composition)

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes Gradient observations

Other

Research are carried out for the atmosphere.

Main infrastructures

Urban training meteorological station to measure actual meteorological data, standard meteorological parameters, and actinometric, soil and gradient measurements.

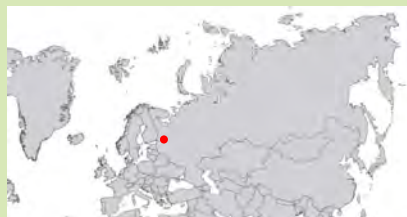
Active since 1980

Lat 59° 56' N

Long 30° 25' E

Alt 30 m

**RUSSIAN
FEDERATION**



MORE INFO & DATA & CONTACT

Website www.rshu.ru

Data Available under request

Contact Dr. Mkhanna Aaed, aaedmohanna@hotmail.com

PART OF

Russian State Hydrometeorological University (RSHU, St. Petersburg) programme for educational process and research activities.



LTM-Agroecosystem



Agroecosystems

MEASUREMENTS

Atmosphere (meteorology) Ambient pressure, temperature, relative air humidity. Rainfall.

Atmosphere (composition)

Hydrosphere

Cryosphere Snow depth and depth of soil freezing.

Pedosphere Temperature, water content, soil properties (pH, C and N concentration, microbial activity, bulk density, water holding capacity).

Biosphere Forest productivity, mass of wood debris and litterfall.

Fluxes CO₂ fluxes from soil (whole year observation, weekly, closed chamber method).

Other

Main infrastructures

Site is located in the Field Experimentation Station of the Institute of Physicochemical and Biological Problems in Soil Science of the Russian Academy of Sciences; 3 km from Pushchino.

Active since 1998

MORE INFO & DATA & CONTACT

Website

Data Available under request (Meteodata and CO₂ flux data from 1998).

Contact Dr. Valentin Lopes de Gerenyu, vlopes@mail.ru

PART OF

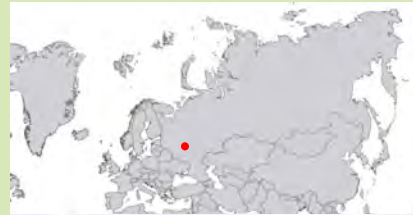
Long-term monitoring system of Institute of Physicochemical and Biological Problems in Soil Science of the Russian Academy of Sciences (IPBPSS RAS)

Lat 54° 49' N

Long 37° 34' E

Alt 186 m

**RUSSIAN
FEDERATION**



LTM-Mature Mixed Forest



MEASUREMENTS

Atmosphere (meteorology)	Wind speed and direction, ambient pressure, temperature, and relative air humidity. Cloud and boundary layer height.
Atmosphere (composition)	Aerosol quantity and quality (detailed). Concentration SO ₂ , SO ₄ , NO ₂ .
Hydrosphere	Rainfall. Amount and chemical composition of run-off.
Cryosphere	Snow depth and depth of soil freezing.
Pedosphere	Temperature, water content, soil properties (pH, C and N concentration, microbial activity, bulk density, water holding capacity).
Biosphere	Forest productivity, mass of wood debris and litterfall.
Fluxes	CO ₂ fluxes from soil (whole year observation, weekly, closed chamber method).
Other	

Main infrastructures

Site is located in the Prioksko-Terrasny State Biosphere Reservation.

Active since 1998

MORE INFO & DATA & CONTACT

Website

Data Available under request (Metiodata 1973-; CO₂ flux data 1998-).

Contact Prof. Irina Kurganova, ikurg@mail.ru

PART OF

Long-term monitoring system of Institute of Physicochemical and Biological Problems in Soil Science of the Russian Academy of Sciences (IPBPSS RAS)

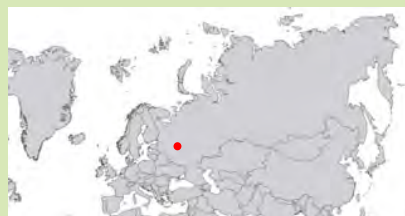
Mature mixed forest

Lat 54° 55' N

Long 37° 33' E

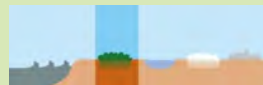
Alt 165 m

**RUSSIAN
FEDERATION**





LTM-Secondary Deciduous Forest



MEASUREMENTS

Atmosphere (meteorology) Ambient pressure, temperature, and relative air humidity..

Atmosphere (composition)

Hydrosphere Rainfall.

Cryosphere Snow depth and depth of soil freezing.

Pedosphere Temperature, water content, soil properties (pH, C and N concentration, microbial activity, bulk density, water holding capacity).

Biosphere Forest productivity, mass of wood debris and litterfall.

Fluxes CO₂ fluxes from soil (whole year observation, weekly, closed chamber method).

Other

Main infrastructures

Site is located in the Field Experimentation Station of the Institute of Physicochemical and Biological Problems in Soil Science of the Russian Academy of Sciences; 3 km from Pushchino..

Active since 1998

MORE INFO & DATA & CONTACT

Website

Data Available under request (Metedata and CO₂ flux data 1998-).

Contact Dr. Valentin Lopes de Gerenyu, vlopes@mail.ru

PART OF

Long-term monitoring system of Institute of Physicochemical and Biological Problems in Soil Science of the Russian Academy of Sciences (IPBPSS RAS)

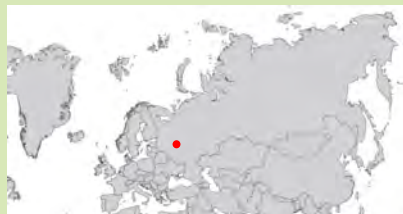
Secondary deciduous forest

Lat 54° 50' N

Long 37° 34' E

Alt 176 m

**RUSSIAN
FEDERATION**





LTM-Cut Grass



MEASUREMENTS

Atmosphere (meteorology) Wind speed and direction, ambient pressure, temperature, and relative air humidity. Cloud and boundary layer height. Rainfall.

Atmosphere (composition) Aerosol quantity and quality (detailed). Concentration SO_2 , SO_4 , NO_2 .

Hydrosphere

Cryosphere Snow depth and depth of soil freezing.

Pedosphere Temperature, water content, soil properties (pH, C and N concentration, microbial activity, bulk density, water holding capacity).

Biosphere Grassland productivity, partitioning of total soil respiration flux into root and microbial components.

Fluxes CO_2 fluxes from soil (whole year observation, weekly, closed chamber method).

Other

Main infrastructures

Site is located in the Prioksko-Terrasny State Biospheric Reservation.

Active since 1998

MORE INFO & DATA & CONTACT

Website

Data Available under request (Meteadata 1973-; CO_2 flux data 1998-).

Contact Prof. Irina Kurganova; ikurg@mail.ru

PART OF

Long-term monitoring system of Institute of Physicochemical and Biological Problems in Soil Science of the Russian Academy of Sciences (IPBPSS RAS)

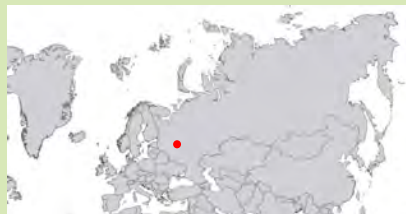
Cut grassland

Lat 54° 55' N

Long 37° 33' E

Alt 165 m

RUSSIAN
FEDERATION





LTM-Uncut Grass



Uncut grassland

MEASUREMENTS

Atmosphere (meteorology) Ambient pressure, temperature, and relative air humidity. Rainfall.

Atmosphere (composition)

Hydrosphere

Cryosphere Snow depth and depth of soil freezing.

Pedosphere Temperature, water content, soil properties (pH, C and N concentration, microbial activity, bulk density, water holding capacity).

Biosphere Grassland productivity, partitioning of total soil respiration flux into root and microbial components.

Fluxes CO₂ fluxes from soil (whole year observation, weekly, closed chamber method).

Other

Main infrastructures

Site is located in the Field Experimentation Station of the Institute of Physicochemical and Biological Problems in Soil Science of the Russian Academy of Sciences; 3 km from Pushchino.

Active since 1998

MORE INFO & DATA & CONTACT

Website

Data Available under request (Meteorological and CO₂ flux data 1998-).

Contact Dr. Valentin Lopes de Gerenyu, vlopes@mail.ru

PART OF

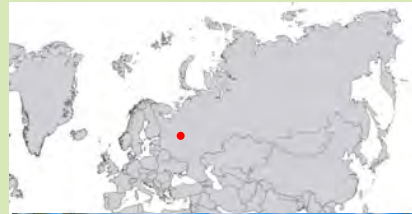
Long-term monitoring system of Institute of Physicochemical and Biological Problems in Soil Science of the Russian Academy of Sciences (IPBSS RAS)

Lat 54° 50' N

Long 37° 34' E

Alt 176 m

**RUSSIAN
FEDERATION**





Pushkinskie Gory



MEASUREMENTS

Atmosphere (meteorology)

Relative humidity, wind speed and direction, atmospheric pressure, precipitation, weather phenomena.

Atmosphere (composition)

Hydrosphere

Groundwater level.

Cryosphere

Height of the snow cover at the point, height of snow cover, snow density, water supply in snow on the route.

Pedosphere

Soil temperature (surface and on standard depths), depth of soil freezing / thawing.

Biosphere

Fluxes

Other

Radiation background - gamma radiation, maximum exposure dose. Agrometeorological observations.

Main infrastructures

Urban site.

Active since

1925

MORE INFO & DATA & CONTACT

Website

Data

Request from contact

Contact

Lyudmila Gilmijarova, glv603@yandex.ru

PART OF

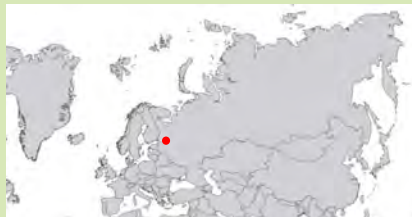
Urban

Lat 57° 01' N

Long 28° 53' E

Alt 102,6m

**RUSSIAN
FEDERATION**





Igarka Geocryology lab



MEASUREMENTS

Atmosphere (meteorology) Wind speed, wind direction, temperature, relative humidity, daily isotopic composition of precipitation (δD , $\delta^{18}O$).

Atmosphere (composition) Isotopic composition of atmospheric water vapor (δD , $\delta^{18}O$).

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Main infrastructures

Igarka Geocryological Laboratory of Institute of Permafrost SB RAS with administrative and accommodation facilities.

Active since 2015, 2018 (planned for precipitation)

MORE INFO & DATA & CONTACT

Website <http://wsibiso.ru>
Data Request from contact
Contact Konstantin Gribanov,
 kgribanov@remotesensing.ru
 Nikita Tananaev, nikita.tananaev@gmail.com

PART OF

WSibiso (Western Siberia Isotops, water and carbon isotopes observations and modeling for understanding high latitude climate processes)

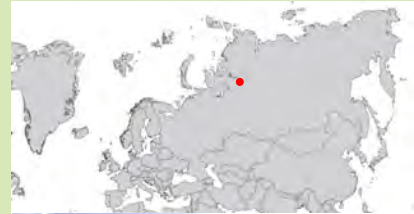
Yenisei river bank

Lat 67° 27' N

Long 86° 31' E

Alt 35 m

**RUSSIAN
FEDERATION**





Kourovka astronomical observatory



MEASUREMENTS

Atmosphere (meteorology) Wind speed, wind direction, temperature, relative humidity, isotopic composition of precipitation (δD , $\delta^{18}O$).

Atmosphere (composition) Aerosol optical depth, Column water vapour, Aerosol size distribution (0.05 – 15 Å), Aerosol volume concentration (0.05 – 15 Å), PM2.5 Aerosol concentration, Total column amount of CO₂, CH₄, H₂O, isotopologues, Archives of isotopic composition of atmospheric water vapour for 2012-2013.

Hydrosphere

Cryosphere

Pedosphere

Biosphere

Fluxes

Other

Main infrastructures

Kourovka astronomical observatory with telescopes, administrative and accommodation facilities.

Active since 2004 (Aerosols), 2012 (atmospheric columnar measurements and isotopic composition of precipitation), 2017 (PM2.5)

MORE INFO & DATA & CONTACT

Website <http://wsibiso.ru>
<http://remotesensing.ru>

Data <http://aeronet.gsfc.nasa.gov> (AOD)

Contact AERONET:
Stanislav Gorda, Stanislav.Gorda@usu.ru
Sergei Beresnev, Sergei.Beresnev@usu.ru
All other measurements:
Konstantin Gribov, kgribov@remotesensing.ru

PART OF

AERONET (Aerosol Robotic Network)
WSibiso (Western Siberia Isotops, water and carbon isotopes observations and modeling for understanding high latitude climate processes)



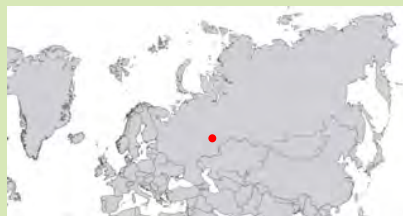
Boreal mixed forest

Lat 57° 02' N

Long 59° 32' E

Alt 300 m

**RUSSIAN
FEDERATION**





Labytangani



IPAE
INSTITUTE OF PLANT
AND ANIMAL ECOLOGY



Tundra

MEASUREMENTS

Atmosphere (meteorology) Wind speed, wind direction, temperature, relative humidity, daily isotopic composition of precipitation (δD , $\delta^{18}O$).

Atmosphere (composition) Isotopic composition of atmospheric water vapor (δD , $\delta^{18}O$).

Hydrosphere

Cryosphere

Pedosphere Temperature vertical profiles in soil for several types of ecosystems.

Biosphere

Fluxes

Other

Main infrastructures

Arctic Research Station of Institute of Plant And Animal Ecology UB RAS with administrative and accommodation facilities.

Active since 2013

MORE INFO & DATA & CONTACT

Website <http://wsibiso.ru>

Data Request from contact

Contact Konstantin Gribanov, kgribanov@remotesensing.ru

PART OF

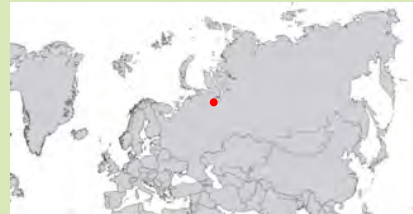
WSibIso (Western Siberia Isotops, water and carbon isotopes observations and modeling for understanding high latitude climate processes)

Lat 66° 39' N

Long 66° 24' E

Alt 20 m

**RUSSIAN
FEDERATION**





Barentsburg (AARI)

MEASUREMENTS

Atmosphere (meteorology) Air temperature, pressure, relative humidity wind speed and direction.
Snow and glacier albedo. Direct and reflected short and longwave radiation.

Atmosphere (composition) Aerosol: optical depth, particle number density, volume particle distribution, mass concentration.
Black carbon. Concentration of CO₂, CO, O₃, SO₂, H₂S, NO, NO_x, NH₃, PM¹⁰, Hg.

Hydrosphere Rivers run-off: amount and chemical composition; rainfall; lakes water level and chemistry; sea level, temperature and salinity.

Cryosphere Snow depth and water content. Glaciers annual ablation, surging, dynamic. Permafrost: active layer depth (CALM site), borehole temperature.

Pedosphere Soil temperature and humidity, contamination.

Biosphere Moss and vascular plants contamination.

Fluxes Heat in the upper soil and snow/atmosphere-soil border.

Other

Geophysical parameters, seismic activity, glacial activity, marine biology, and soil properties are additionally observed by institutes of the Consortium Russian Scientific Center on Spitsbergen.

Main infrastructures

Meteo and weather stations, satellite station, permafrost site, instrumental tower 2 and 10 m. Stationary chemical laboratory: trace elements and organic compounds analysis, hydrochemistry, microscopy, sample preparation. Offices, meeting rooms, guest house for researchers, garage and storage facilities.

Active since

1932

MORE INFO & DATA & CONTACT

Website rscs.aari.ru (in russian)

Data rae-s@aari.ru

Contact Head of the Russian Scientific Arctic Expedition on Spitsbergen Yuri Ugryumov, ugr@aari.ru
Chief specialist Anna Nikulina, anikulina@aari.ru

PART OF

Consortium Russian Scientific Center on Spitsbergen, including:



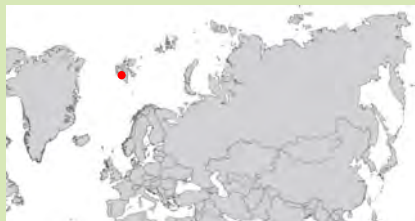
Arctic tundra, rivers, lakes, glaciers

Lat 78° 04' N

Long 14° 13' E

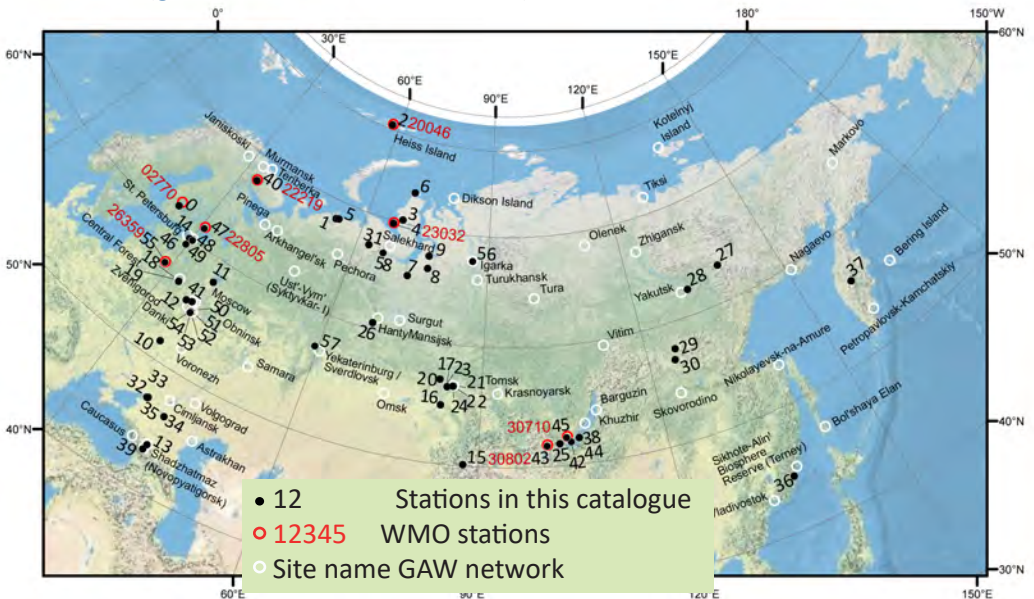
Alt 80 m

**RUSSIAN
FEDERATION**



WMO OSCAR and GAW STATIONS

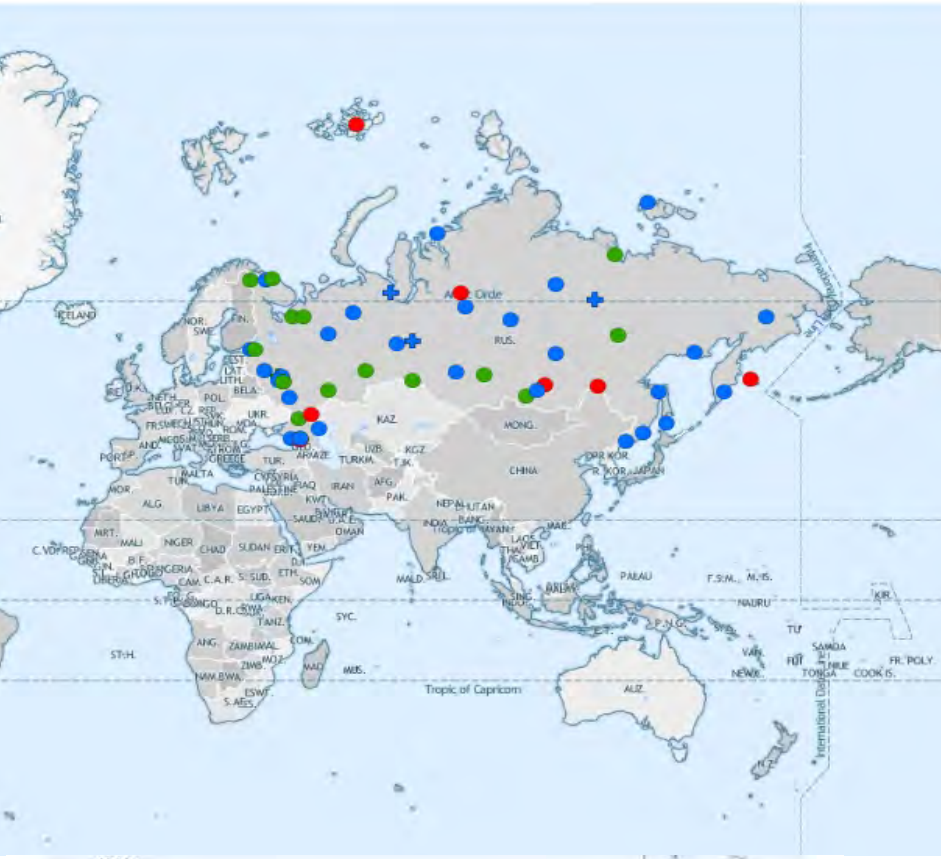
Some stations listed in the catalogue are part of the global WMO network of meteorological stations or are located near one. WMO OSCAR is the WMO's official repository of WIGOS metadata for all surface-based observation stations and platforms. More details in OSCAR and WIGOS homepages www.wmo-sat.info/oscar, www.wmo.int/pages/prog/www/wigos/index_en.html WMO-GWA is collaborating with the PEEX network with meteorological and atmospheric composition parameters that meet WMO observation standards and high data quality. GAW data is freely available. Consult GAW stations in more details at the Global Atmosphere Watch Station Information System, GAW SIS (gawsis.meteoswiss.ch/GAW SIS).




Map A1. Overlap of stations in this catalogue, relevant WMO stations and the GAW network in the Russian Federation.

Stations in this catalogue with related or nearby WMO stations (operated by RosHydroMet) conducting meteorological measurements:

- 0 Hyytiälä (WMO-02770 : Juupajoki Hyytiälä)
- 2 Heiss (WMO-20046 : Heiss Island)
- 4 Marre-Sale (WMO-23032)
- 40 Khibiny Station (WMO-22219 : Kirovsk)
- 43 Mondy (WMO-30802 : Mondy)
- 45 Irkutsk Urban Station (WMO-30710 : Irkutsk)
- 47 Valaam Education and Scientific Station (WMO-22805 : Valaam Island)
- 55 Pushkinskie Gory (WMO-26359)




 Schweizerische Eidgenossenschaft
 Confederaziun svizra
 Confederaziun Svizara
 Confederaziun svizra
 Swiss Confederation
 Federal Department of Home Affairs FDHA
 Federal Office of Meteorology and Climatology MeteoSwiss

- Global
- Regional
- Contributing networks
- Local
- Other networks
- Reporting
- Partly Reporting
- Non-reporting
- Closed
- Planned
- Pre-operational

Map A2. GAW/SIS output on the query for station belonging to Russian Federation. Note the different categories and status.

Table A1. Summary on the coverage of the different type of measurements, same data as in Maps 2-4.

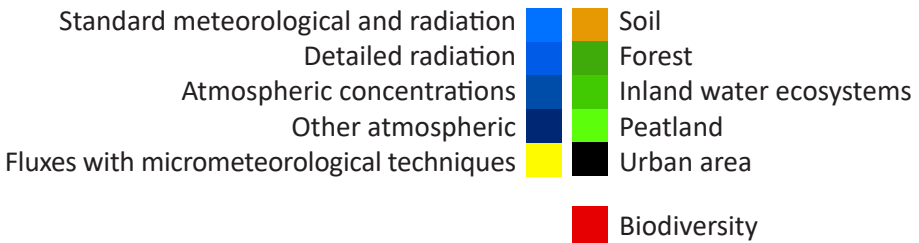
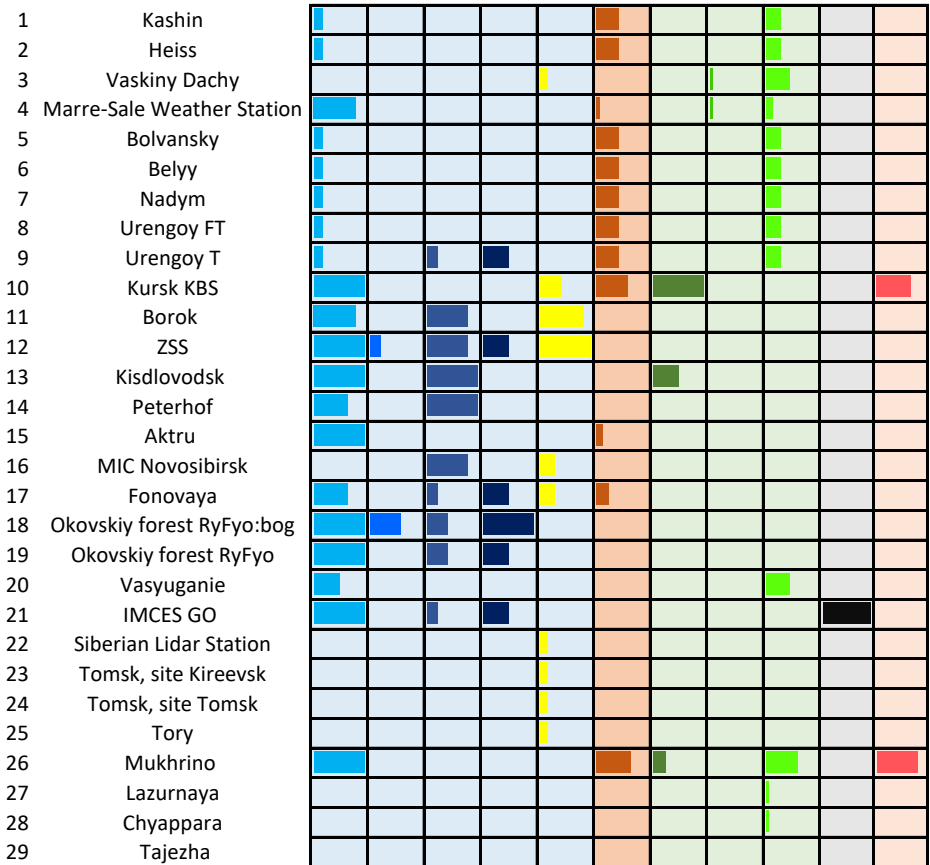
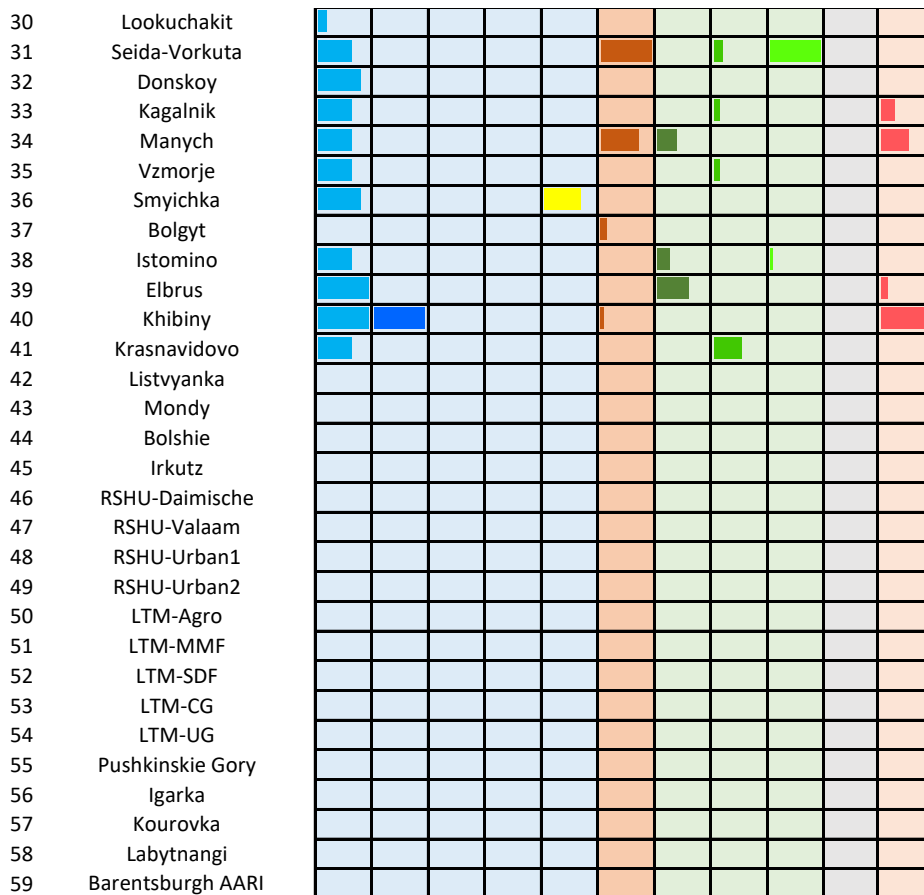


Table A1. continuation



Horizontal bars represent the % of measurements that the station covers in relation to the possible measurements listed in the PEEEX metadatabase for a particular group of measurements. The stations without data have collaborated in the catalogue but have not provided yet input to the metadatabase.

This work is supported by

- * Moscow State University (MSU), Faculty of Geography, Russia
Academician Nikolay Kasimov
- * AEROCOSMOS, Russian Academy of Science (RAS), Russia
Academician Valery Bondur
- * Institute for Atmospheric and Earth System Research (INAR), Finland
Academician Markku Kulmala

Acknowledged by

- * IASAC's International Science Initiative in the Russian Arctic (ISIRA)
- * EU Horizon2020 - Integrated Arctic Observation System - INTAROS
- * EU Horizon2020 - The European Network for observing our changing planet - ERA-PLANET - Strand-4 iCUPE
- * World Meteorological Organization - Global Atmosphere Watch Programme (WMO-GAW), Prof. Alexander Baklanov

