PAN-EURASIAN EXPERIMENT

PEEX

In-Situ Atmospheric-Ecosystem Collaborating Stations-Russian Federation

eCATALOGUE 2018-

This catalogue is part of the PEEX *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.

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

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

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ABOUT THIS CATALOGUE

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 PEEX 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 PEEX 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 PEEX 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

CONTENTS

Which station is in this page:
Name of the Site and number in the map.

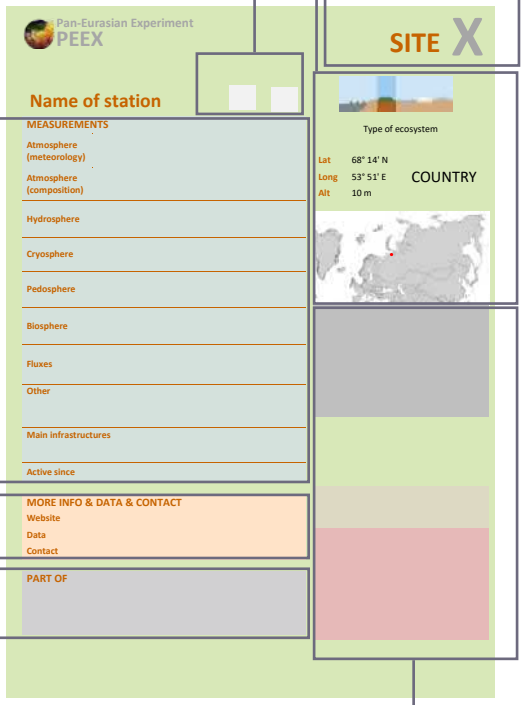
Where is the station measuring:
Type of surface + geographical location.

Who is running the station:
Institutions that own or manage the station or other collaborating institutions

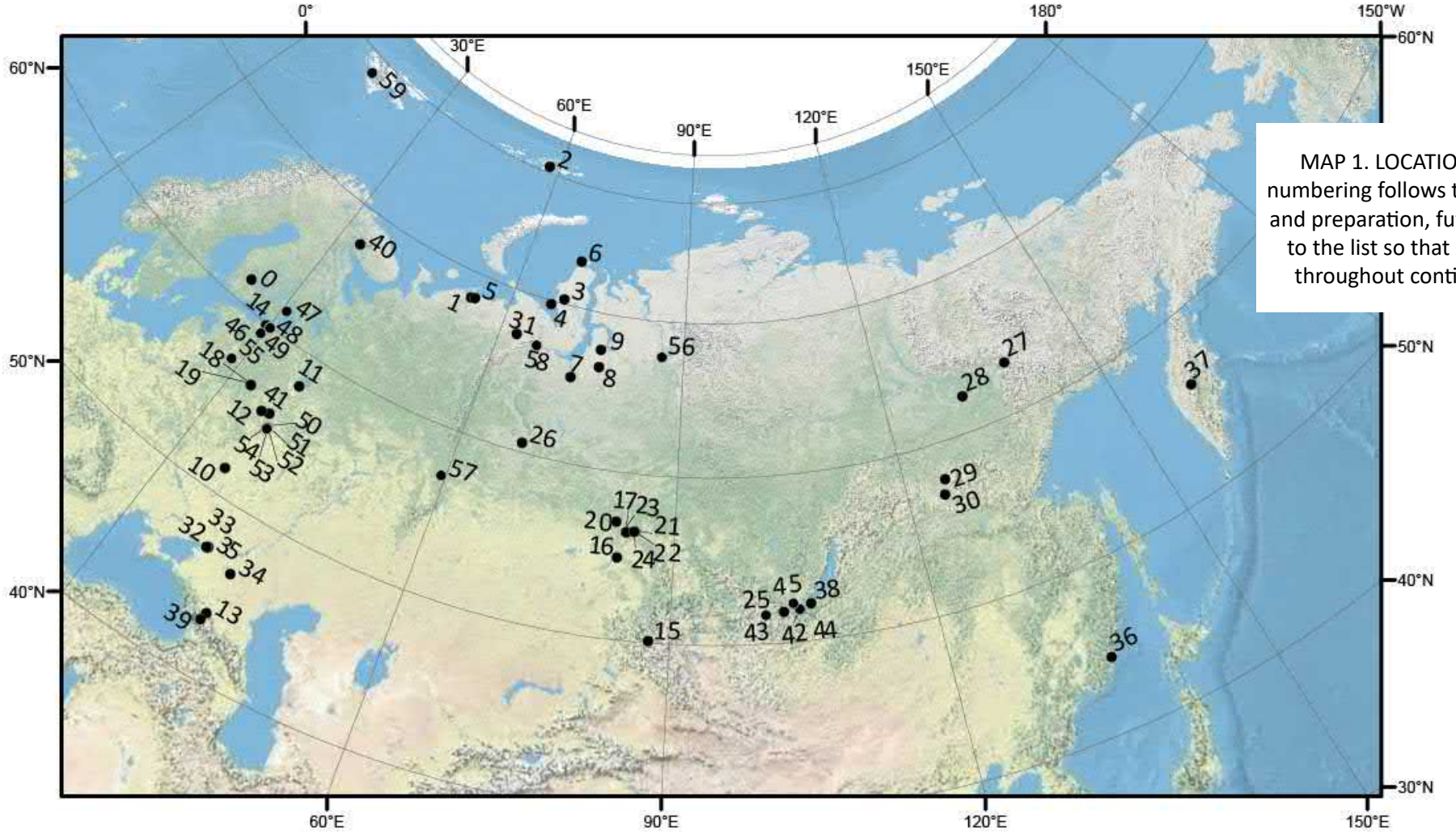
What is this station measuring:
Overview of the measurements according to system compartments
+ fluxes between compartments
+ other relevant information.

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.

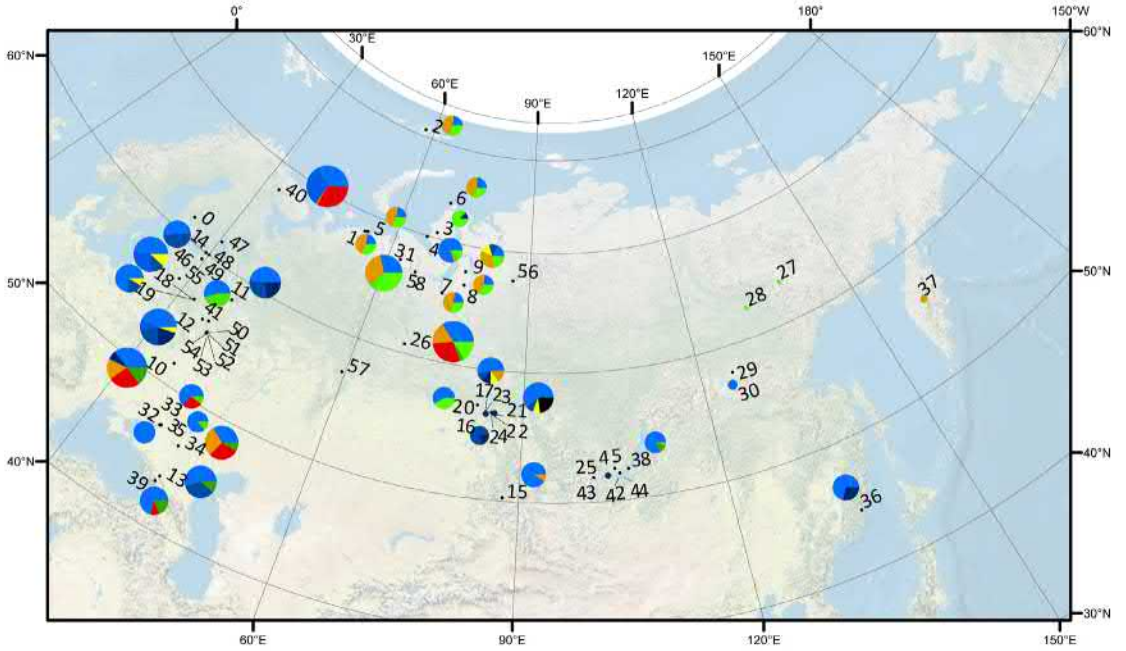


How does the station look like:
Images of the site, station surroundings, or measuring infrastructe.

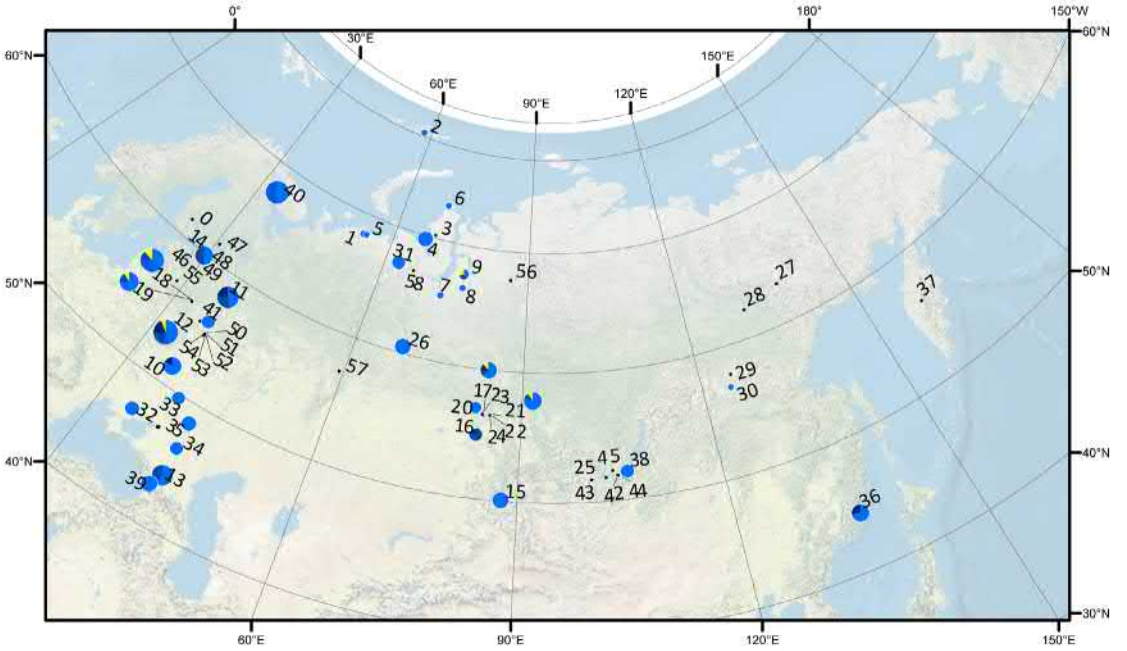


MAP 1. LOCATION AND NUMBERING. The numbering follows the order of material receival and preparation, future additions are appended to the list so that stations retain the number throughout continuous catalogue updates.

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



MAP 2. Overview of the measurements.



MAP 3. Overview of the atmospheric measurements.

Type of measurements

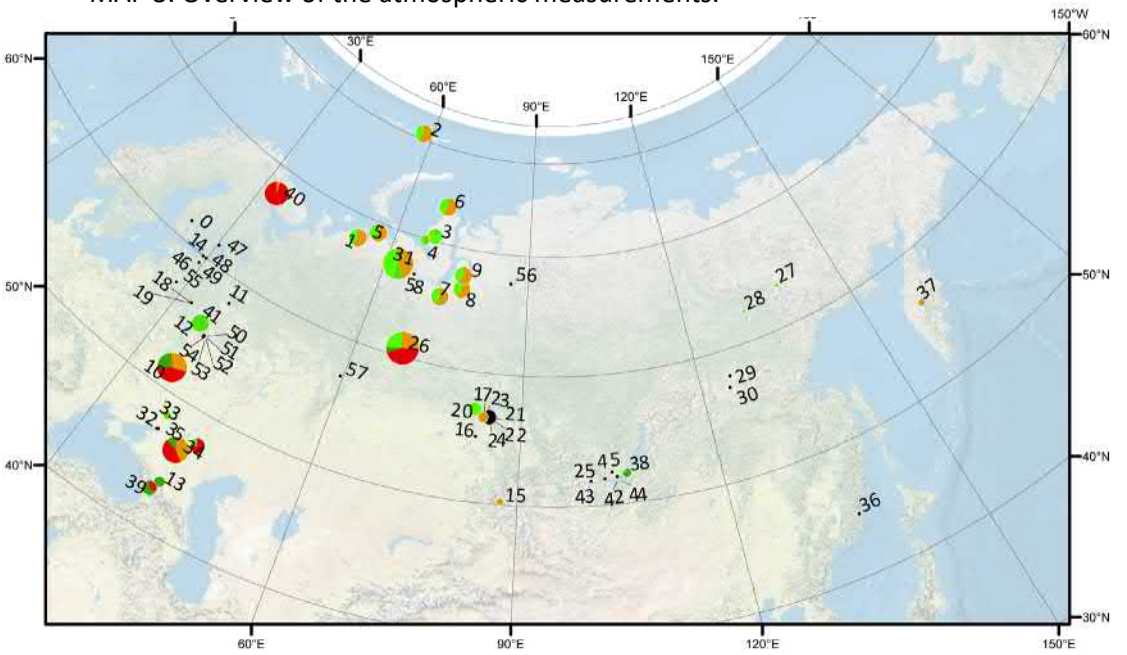
- Standard meteorological and radiation
- Detailed radiation
- Atmospheric composition
- Other atmospheric
- Fluxes with micrometeorological techniques

Biogeochemical measurements specific to:

- Soil
- Forest
- Inland water ecosystems
- Peatland
- Urban area

- Biodiversity

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 measurements other than atmospheric.

PAN-EURASIAN EXPERIMENT
PEEX

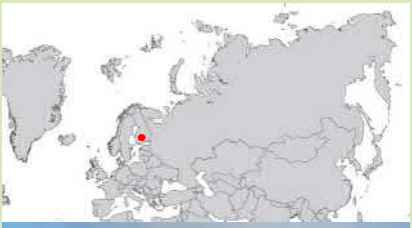
HYYTIÄLÄ 0

SMEAR II: Station for measuring Ecosystem – Atmosphere Relations

Boreal forest + lake

Lat	61° 31' N
Long	24° 17' E
Alt	181 m

FINLAND



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 CO_2, H_2O, CH_4, CO, O_3, SO_2, NO, NO_x, VOC, NH_3, 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 ecophysiolgy and productivity.
Fluxes	Momentum, heat, CO_2, H_2O, O_3, NO_x, VOC, N_2O, 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/smear-ii

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

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

PART OF

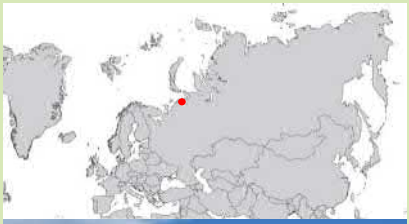
ICOS (Integrated Carbon Observation System)
ANAEE (Analysis and Experimentation on Ecosystems)
eLTER (European Long Term Ecosystem Research)
WMO (World Meteorological Organization)
ACRIS (Aerosol, Clouds, and Trace Gases Research Infrastructure)
CRAIC (Cryosphere-Atmosphere Interactions in a Changing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

Kashin

Tundra peatland

Lat	68° 14' N
Long	53° 51' E
Alt	10 m

RUSSIAN FEDERATION



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 liquen 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)

PAN-EURASIAN EXPERIMENT
PEEX

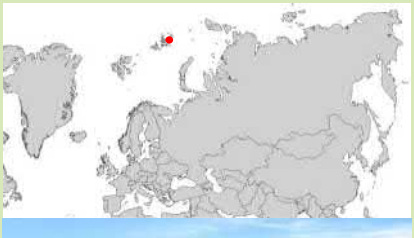
HEISS 2

Heiss

Polar desert

Lat	80° 35' N
Long	58° 01' E
Alt	12 m

RUSSIAN FEDERATION



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	CH_4

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)

PAN-EURASIAN EXPERIMENT
PEEX

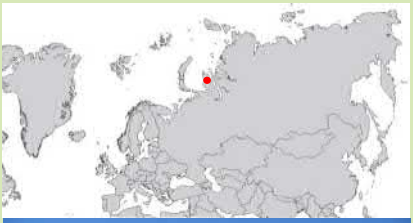
VASKINY DACHI 3

Vaskiny Dachi

Tundra peatland+lake

Lat	70° 16' N
Long	68° 54' E
Alt	35 m

RUSSIAN FEDERATION



MEASUREMENTS

Atmosphere (meteorology)	Temperature.
Atmosphere (composition)	
Hydrosphere	Discrete sampling of water column DOC concentration, bathimetry. 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 (COmbining 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)

PAN-EURASIAN EXPERIMENT
PEEX

MARRE-SALE 4

Marre-Sale Weather Station

Typical tundra

Lat	69° 43' N
Long	66° 53' E
Alt	29 m

RUSSIAN FEDERATION

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

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

Lat	68° 17' N
Long	54° 30' E
Alt	25 m

RUSSIAN FEDERATION

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)

Belyy

Tundra peatland

Lat	73° 20' N
Long	70° 04' E
Alt	8 m

RUSSIAN FEDERATION

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	CH_4

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

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

Lat	65° 19' N
Long	72° 52' E
Alt	22 m

RUSSIAN FEDERATION

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	CH_4

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

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)

PAN-EURASIAN EXPERIMENT
PEEX

URENGOY FT 8

Urengoy Forest-Tundra

Southern forest tundra

Lat	66° 18' N
Long	76° 54' E
Alt	61 m

RUSSIAN FEDERATION

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	CH_4

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)

PAN-EURASIAN EXPERIMENT
PEEX

URENGOY T 9

Urengoy Tundra

Southern tundra

Lat	67° 18' N
Long	76° 42' E
Alt	33 m

RUSSIAN FEDERATION

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	CH_4

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)

PAN-EURASIAN EXPERIMENT
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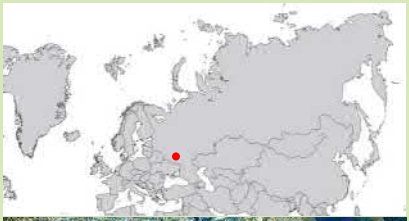
KURSK BS 10

Kursk Biosphere Station

Oak forest-steppe + farmland

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

RUSSIAN FEDERATION



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_2O 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)

Borok-IPE-RAS: Borok Geophysical Observatory

Hemiboreal mixed forest

Lat	58° 2' N
Long	38° 7' E
Alt	100 m

RUSSIAN FEDERATION

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, lightings.
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://wwwbrk.adm.yar.ru
Data	http://geodata.borok.ru
Contact	Sergey Anisimov, anisimov@borok.yar.ru

PART OF

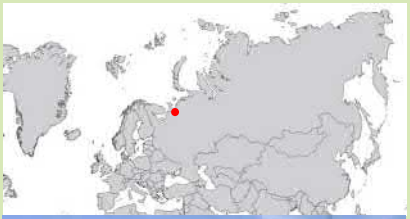
INTERMAGNET (International Real-time Magnetic Observatory Network)

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, CH_4, NO_2, O_3, H_2O, 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 (Networ fo the Detection of Atmospheric Composition Change)
BSRN (Baseline Surface Radiation Network)
Mosecomonitoring (Moscow municipal network for air quality control)

PAN-EURASIAN EXPERIMENT
PEEX

KHMS 13

Kislovodsk High Mountain Station

High-elevation

Lat	43˚41' N
Long	42˚39' E
Alt	2096 m

RUSSIAN FEDERATION

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 gradien of O_3, NO_2. Total content of H_2O, CO.
Hydrosphere	Rainfall.
Cryosphere	Snow depth.
Pedosphere	Total content of H_2O, 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)

PAN-EURASIAN EXPERIMENT
PEEX

PETERHOF 14

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

Urban

Lat	59° 52' N
Long	29° 49' E
Alt	20 m

RUSSIAN FEDERATION

MEASUREMENTS

Atmosphere (meteorology)	Wind speed and direction, ambient pressure, temperature, and relative humidity.
Atmosphere (composition)	Concentration of CO, CO_2, O_3, NO_X, CH_4.
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

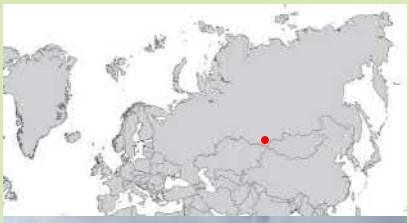
PART OF

Aktru Geographical Station

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



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 ResearchTomsk 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)

NOVOSIBIRSK 16

Novosibirsk Magnetic Ionospheric Station

Forest steppe

Lat	54° 50' N
Long	83° 16' E
Alt	164 m

RUSSIAN FEDERATION

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

PART OF

Fonovaya observatory

Mixed boreal forest+river

Lat	56° 26' N
Long	84° 04' E
Alt	80 m

RUSSIAN FEDERATION

MEASUREMENTS

Atmosphere (meteorology)	Wind speed and direction, ambient pressure, temperature, and relative humidity.
Atmosphere (composition)	Aerosol size distribution. Concentration of CO_2, CH_4, NO, NO_2, SO_2, CO, O_3.
Hydrosphere	
Cryosphere	
Pedosphere	
Biosphere	
Fluxes	CO_2, CH_4, 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

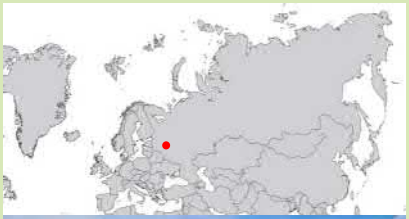
RU-FYO BOG 18

Okovskiy Forest RU-FYO:Bog

Natural bog

Lat	56° 27' N
Long	32° 55' E
Alt	260 m

RUSSIAN FEDERATION



MEASUREMENTS

Atmosphere (meteorology)	Wind speed and direction, ambient pressure, temperature, and relative humidity. Solar radiation (PAR, UV, longwave, 4-components).
Atmosphere (composition)	Concentration of CO_2, H_2O.
Hydrosphere	Rainfall, watertable level.
Cryosphere	
Pedosphere	
Biosphere	
Fluxes	Momentum, heat, CO_2, H_2O. 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

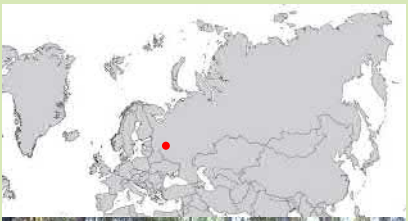
PART OF

Okovskiy Forest RU-FYO

Wet Spruce Stand

Lat	56° 28' N
Long	32° 55' E
Alt	265 m

RUSSIAN FEDERATION



MEASUREMENTS

Atmosphere (meteorology)	Wind speed and direction, ambient pressure, air temperature and relative humidity. Solar radiation (PAR, longwave, shortware).
Atmosphere (composition)	
Hydrosphere	
Cryosphere	Snow depth.
Pedosphere	Temperature, water content, ground water level.
Biosphere	Forest ecophysiolgy and productivity.
Fluxes	Momentum, Heat, CO_2, H_2O, CH_4.

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

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

Peatlands, forests, meadows

Lat	56° 98' N
Long	82° 61' E
Alt	120 m

RUSSIAN FEDERATION

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 ecophysiolgy and productivity, transformation of plant matter.
Fluxes	CO_2, CH_4. 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

PART OF

PAN-EURASIAN EXPERIMENT
PEEX

IMCES GO 21

IMCES Geophysical Observatory

IMCES SB RAS

TOMSK POLYTECHNIC UNIVERSITY

Urban forest + Suburb

Lat	56°28' N
Long	85°03' E
Alt	167 m

RUSSIAN FEDERATION

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)

PAN-EURASIAN EXPERIMENT
PEEX

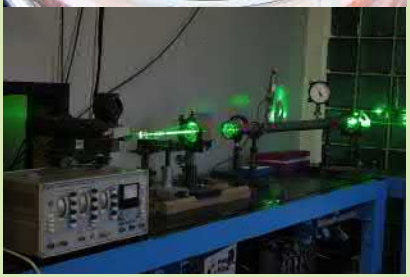
SIBERIAN LS 22

Siberial Lidar Station

Mixed forest

Lat	56° 28' N
Long	85° 05' E
Alt	168 m

RUSSIAN FEDERATION



MEASUREMENTS

Atmosphere (meteorology)	
Atmosphere (composition)	Vertical profiles of temperature at 10-70 km. Vertical profiles of ozone at 5-40 km. Total ozone. 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

PAN-EURASIAN EXPERIMENT
PEEX

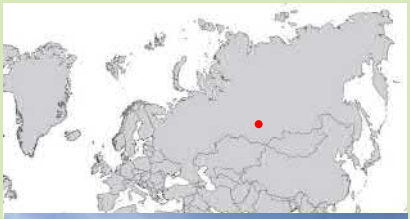
KIREEVSK 23

Tomsk, site Kireevsk

Boreal mixed forest

Lat	56° 25' N
Long	84° 03' E
Alt	130 m

RUSSIAN FEDERATION



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

PART OF

Tomsk, site Tomsk

Boreal, Urban

Lat	56° 28' N
Long	85° 02' E
Alt	130 m

RUSSSIAN FEDERATION

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

Irkutsk, site Tory

Tunka valley

Lat	51° 48' N
Long	103° 04' E
Alt	670 m

RUSSIAN FEDERATION

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

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

Sub-arctic, natural bog

Lat	60° 32' N
Long	68° 25' E
Alt	60 m

RUSSIAN FEDERATION

MEASUREMENTS

Atmosphere (meteorology)	Temperature profile, relative humidity, wind direction, wind speed (+2m, +10 m), atmospheric pressure, radiation (solar, PAR, net).
Atmosphere (composition)	Concentration of CO_2, H_2O, CH_4.
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	CO_2 and CH_4 surface flux (manual and automatic chambers). Net ecosystem CO_2, 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

LAZURNAYA 27

Lazurnaya
Monitoring Geothermal Point

Hemiboreal, Tundra

Lat	63° 03' N
Long	138° 49' E
Alt	1160 m

RUSSIAN FEDERATION

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

Chyappara
Monitoring Geothermal Point

Tundra

Lat	62° 08' N
Long	131° 18' E
Alt	234 m

RUSSIAN FEDERATION

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

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 30

Lookuchakit
Monitoring Geothermal point

Mixed forest

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

RUSSIAN FEDERATION

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

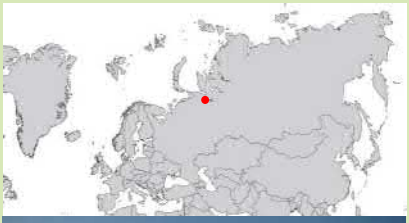
PART OF

Seida-Vorkuta

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



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 ^{14}C age, macrofossil analysis, SWC, temperature profile, nutrient and DOC concentrations, isotopic ratios of C and N in SOM, concentrations of CO_2, CH_4 and N_2O in soil pore gas, isotopic ratios of CH_4 and N_2O 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	CO_2, CH_4 and N_2O fluxes by manual chambers, soil microbial respiration, isotopic composition of CO_2, CH_4 and N_2O emitted, ^{14}C age of CO_2 emitted. CO_2 and CH_4 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, maija.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 N_2O 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.

Donskoy

Wetland + River

Lat	47° 06' N
Long	39° 18' E
Alt	3 m

RUSSIAN FEDERATION

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

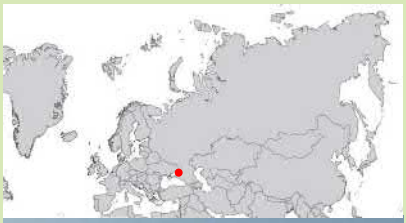
PART OF

Kagalnik

Wetland + river

Lat	47° 04' N
Long	39° 18' E
Alt	0 m

RUSSIAN FEDERATION



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

PART OF

Manych

Dry-steppe + lake

Lat	46° 25' N
Long	42° 42' E
Alt	34 m

RUSSIAN FEDERATION

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

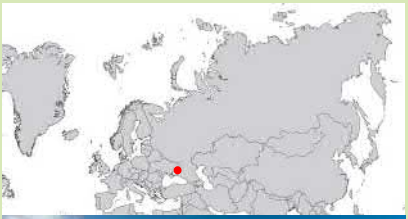
PART OF

Vzmorje

Shallow sea

Lat	47° 04' N
Long	39° 09' E
Alt	1.5 m

RUSSIAN FEDERATION



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

PART OF

Smyichka

Sub-boreal + lake + sea + mining

Lat	44° 20' N
Long	135° 49' E
Alt	2 m

RUSSIAN FEDERATION

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://tigdvoru/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)

BOLGYT 37

KBPGI FEB RAS
Field base Bolgyt

Subarctic permafrost + volcano

Lat	55° 55' N
Long	158° 41' E
Alt	480 m

RUSSIAN FEDERATION

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

International Ecological Education Center Istomino

Marshland +boreal forest +Lake Baikal

Lat	52° 08' N
Long	106° 18' E
Alt	470 m

RUSSIAN FEDERATION

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

Elbrus Station

High Mountain

Lat	43°15' N
Long	42°28' E
Alt	2326 m

RUSSIAN FEDERATION

MEASUREMENTS

Atmosphere (meteorology)	Air temperature, wind speed and direction. Precipitation.
Atmosphere (composition)	
Hydrosphere	
Cryosphere	Snow depth and water equivalent, metamorphosis of snow cover throughtout 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

PART OF

PAN-EURASIAN EXPERIMENT
PEEX

KHIBINY 40

Khibiny Station

Taiga-tundra ecotone

Lat	67°38' N
Long	33°43' E
Alt	320 m

RUSSIAN FEDERATION

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 throughtout 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 fl ats 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 scientifi c 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)

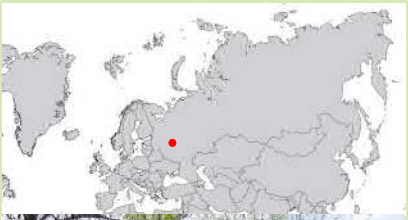
ISIRA of IASC (International Science Initiative in the Russian Arctic)

Krasnovidovo Station

Eutrophic reservoir

Lat	55°34' N
Long	35°51 E
Alt	183 m

RUSSIAN FEDERATION



MEASUREMENTS

Atmosphere (meteorology)	Wind speed, air pressure, temperature, and relative humidity. Rainfall.
Atmosphere (composition)	
Hydrosphere	Water temperature, clarity, conductance, disolved 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 are 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

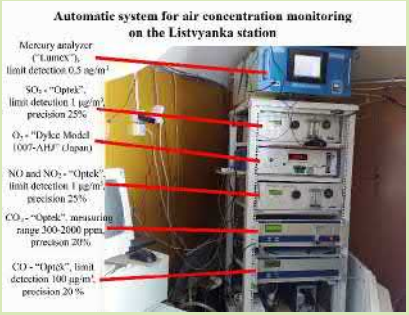
PART OF

Listvyanka

Boreal forest + hilltop

Lat	51° 51' N
Long	104° 54' E
Alt	700 m

RUSSIAN FEDERATION



MEASUREMENTS

Atmosphere (meteorology)	Wind direction and velocity, temperature, humidity. Precipitation.
Atmosphere (composition)	Aerosol quantity. Concentration of SO_2, NO_x, NH_3, O_3, 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 outskirt 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

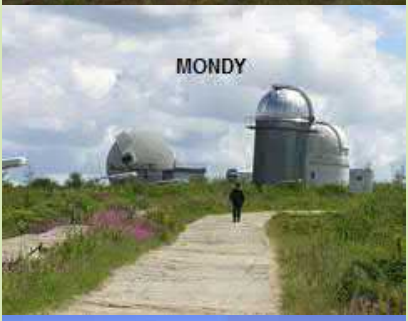
EANET (Acid Deposition Montoring Network in East Asia)

Mondy

Remote station

Lat	51° 40' N
Long	101° 00' E
Alt	2005 m

RUSSIAN FEDERATION



MEASUREMENTS

Atmosphere (meteorology)	Wind direction and velocity, temperature, humidity. Rainfall.
Atmosphere (composition)	Aerosol quantity. Concentration of SO_2, NO_x, NH_3, O_3, 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(H_2O), pH(KCl), exchangeable ions (Na^+, K^+, Ca^{2+}, Mg^{2+}, Al^{3+}, 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 livestocks. 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)

PAN-EURASIAN EXPERIMENT
PEEX

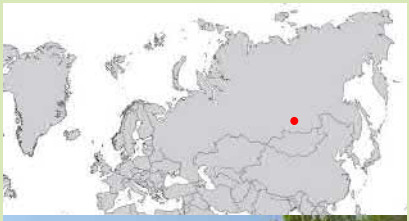
BOLSHIE KOTY 44

Bolshie Koty

Boreal pine forest + shore of lake Baykal

Lat	51° 51' N
Long	104° 54' E
Alt	500 m

RUSSIAN FEDERATION



MEASUREMENTS

Atmosphere (meteorology)	
Atmosphere (composition)	
Hydrosphere	
Cryosphere	
Pedosphere	pH(H_2O), pH(KCl), exchangeable ions (Na^+, K^+, Ca^{2+}, Mg^{2+}, Al^{3+}, 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 outskirt 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)

Irkutsk Urban Station

Irkutsk city + second forest

Lat	52° 14' N
Long	104° 15' E
Alt	500 m

RUSSIAN FEDERATION

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, NOx, 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(H_2O), pH(KCl), exchangeable ions (Na^+, K^+, Ca^{2+}, Mg^{2+}, Al^{3+}, 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)

DAIMISCHE 46

RSHU- Daimische

Rural area + mixed forest + river

Lat	59° 19' N
Long	29° 52' E
Alt	105 m

RUSSIAN FEDERATION

MEASUREMENTS

Atmosphere (meteorology)	Air temperature, wind characteristics, relative humidity, atmospheric pressure. Radiation. Rainfall.
Atmosphere (composition)	
Hydrosphere	Water dicharges, water temperatures and levels (1963-). Continuous water temperature and levels measurements at the Oredezh 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 Gavrilov, i.gavrilov@rshu.ru

PART OF

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

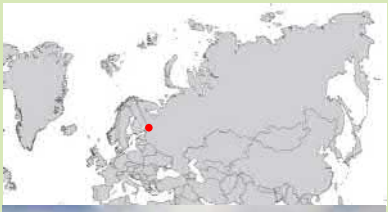
Valaam: Educational and Scientific Station

RSHU

Lake Archipielago

Lat	61° 21' N
Long	30° 53' E
Alt	20 m

RUSSIAN FEDERATION



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 (O_2, CO_2, COD, conductivity, pH, Pt-Co, PO4, Ptot, NH_4, NO_3), 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.

RSHU-Urban 1

Urban area + city park + river

Lat	59° 55' N
Long	30° 25' E
Alt	30 m

RUSSIAN FEDERATION

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)

RSHU-U249

RSHU-Urban 2

Urban area + city park

Lat	59° 56' N
Long	30° 25' E
Alt	30 m

RUSSIAN FEDERATION

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

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

IPBPSS RAS

Agroecosystems

Lat	54° 49' N
Long	37° 34' E
Alt	186 m

RUSSIAN FEDERATION

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

Main infrastructures

Site is located in the Field Experimaetation 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 CO_2 flux data from 1998).
Contact	Dr. Valentin Lopes de Gerenyu, vlopes@mail.ru

PART OF

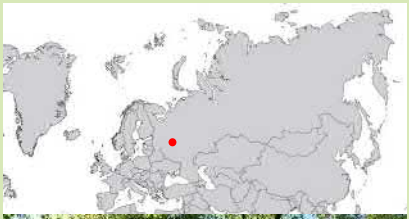
Long-term monitoring system of Institute of Physicochemical and Biological Problems in Soil Science of the Russian Academy of Sciences (IPBPSS RAS)

LTM-Mature Mixed Forest

Mature mixed forest

Lat	54° 55' N
Long	37° 33' E
Alt	165 m

RUSSIAN FEDERATION



MEASUREMENTS

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

PAN-EURASIAN EXPERIMENT
PEEX

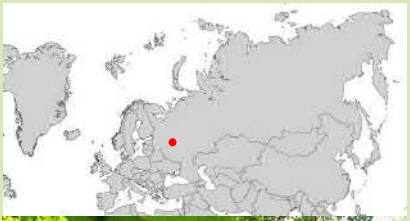
LTM-SDF 52

LTM-Secondary Deciduous Forest

Secondary deciduous forest

Lat	54° 50' N
Long	37° 34' E
Alt	176 m

RUSSIAN FEDERATION



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

Main infrastructures

Site is located in the Field Experimaetation 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 CO_2 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)

PAN-EURASIAN EXPERIMENT
PEEX

LTM-CG 53

LTM-Cut Grass

Cut grassland

Lat	54° 55' N
Long	37° 33' E
Alt	165 m

RUSSIAN FEDERATION

MEASUREMENTS

Atmosphere (meteorology)	Wind speed and direction, ambient pressure, temperature, and relative air humidity. Cloud and boundary layer heigh. 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 microboal 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 (Meteodata 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)

PAN-EURASIAN EXPERIMENT
PEEX

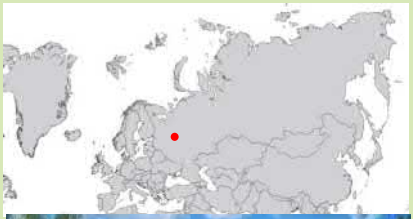
LTM-UG54

LTM-Uncut Grass

Uncut grassland

Lat	54° 50' N
Long	37° 34' E
Alt	176 m

RUSSIAN FEDERATION



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

Main infrastructures

Site is located in the Field Experimaetation 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 CO_2 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)

Pushkinskie Gory

Urban

Lat	57° 01' N
Long	28° 53' E
Alt	102,6m

RUSSIAN FEDERATION

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

PAN-EURASIAN EXPERIMENT
PEEX

IGARKA 56

Igarka Geocryology lab

Yenisei river bank

Lat	67° 27' N
Long	86° 31' E
Alt	35 m

RUSSIAN FEDERATION

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)

PAN-EURASIAN EXPERIMENT
PEEX

KOUROVKA 57

Kourovka astronomical observatory

Boreal mixed forest

Lat	57° 02' N
Long	59° 32' E
Alt	300 m

RUSSIAN FEDERATION

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 CO_2, CH_4, H_2O, 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 Gribanov,kgribanov@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)

Labytnangi

Tundra

Lat	66° 39' N
Long	66° 24' E
Alt	20 m

RUSSIAN FEDERATION

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

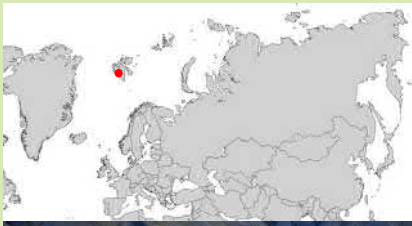
WSibIso (Western Siberia Isotops, water and carbon isotopes observations and modeling for understanding high latitude climate processes)

Barentsburgh (AARI)

Arctic tundra, rivers, lakes, glaciers

Lat	78° 04' N
Long	14° 13' E
Alt	80 m

RUSSIAN FEDERATION



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 CO_2, CO, O_3, SO_2, H_2S, NO, NO_x, NH_3, PM^{10}, 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)

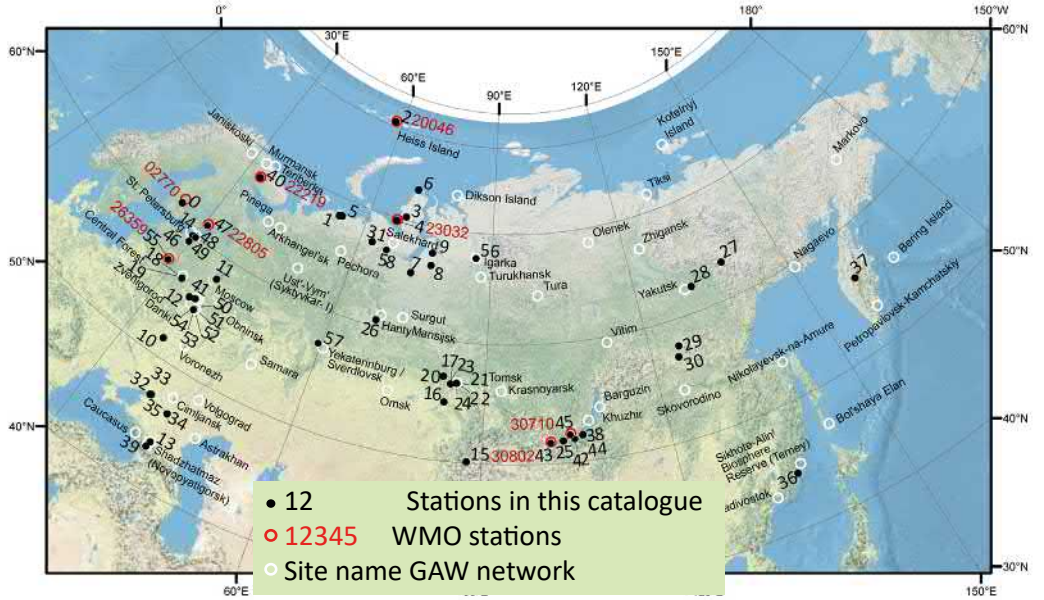
Data rae-s@aari.ru

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:

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, GAWSIS (gawsis.meteoswiss.ch/GAWSIS).



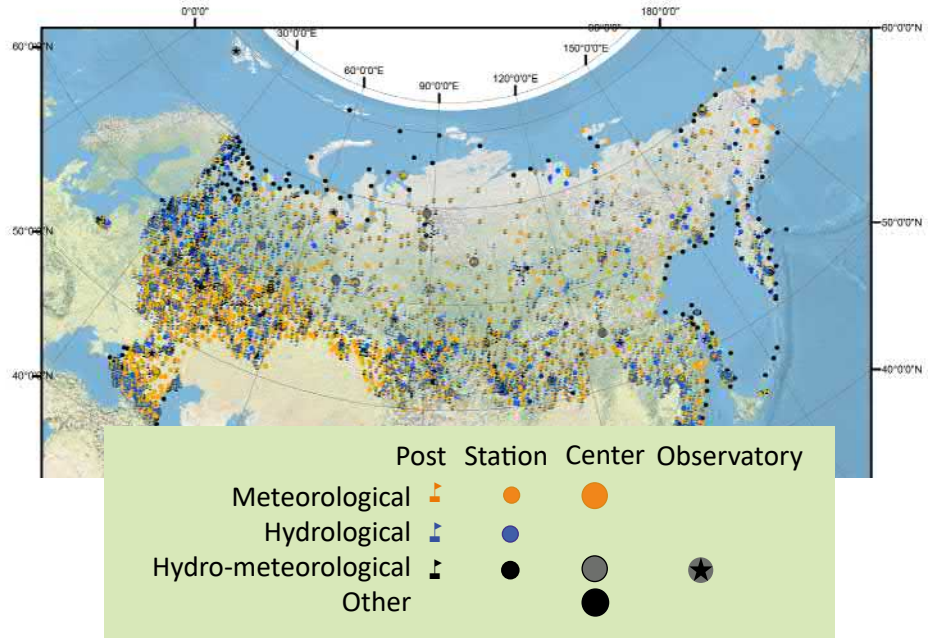
Map A1. Overap of stations in this catalogue, relevant WMO stations and the GWA network in the Russian Federation.

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

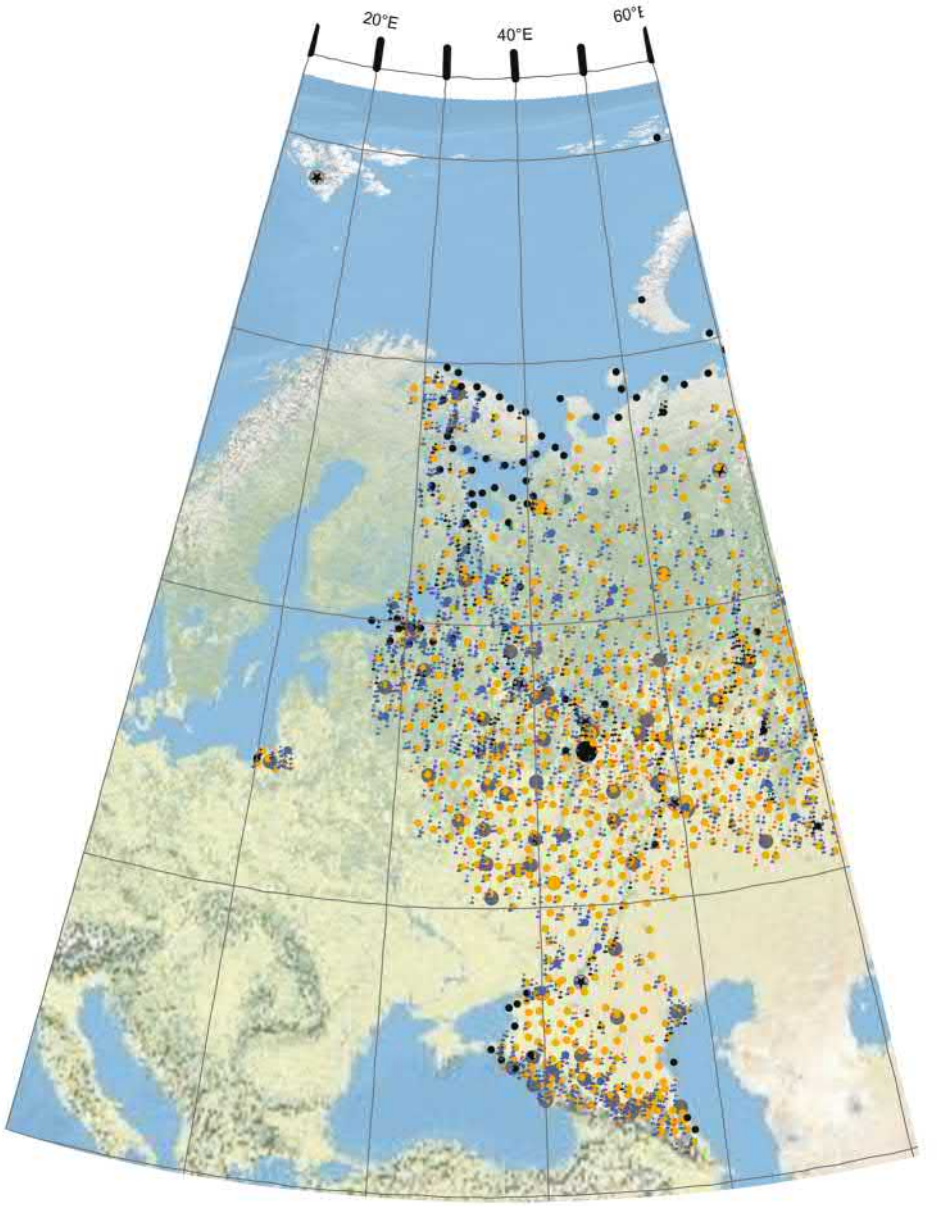
0 Hyytiälä (WMO-02770 : Juupajoki Hyytiälä)
2 Heiss (WMO-20046 : Heiss Island)
4 Marre-Sale (WMO-23032)
40 Khibiny Station (WMO-22219 : Kirovsk)
43 Mondy (WMO-30802 : Mondy)
45 Irkutsk Urban Station (WMO-30710 : Irkutsk)
47 Valaam Education and Scientific Station (WMO-22805 : Valaam Island)
55 Pushkinskie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

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

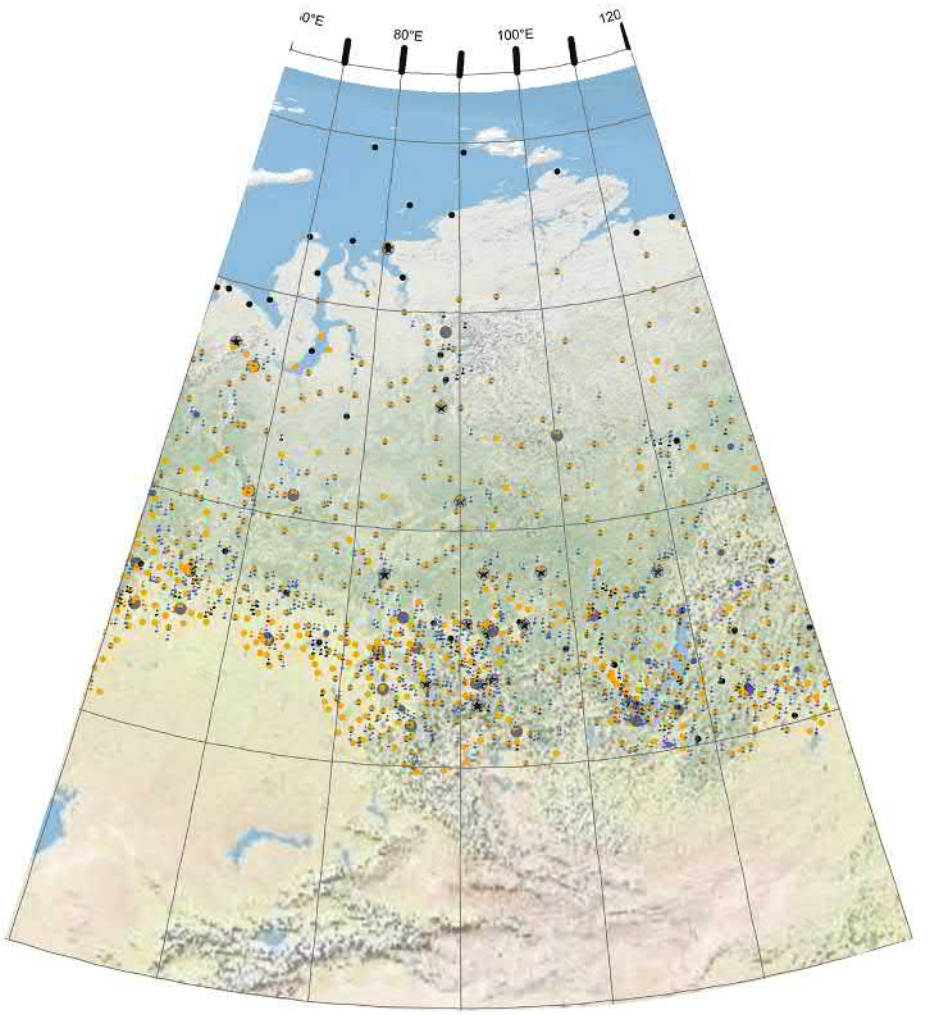
Roshydromet is the Federal Service for Hydrometeorology and Environmental Monitoring of Russia and, amongst other tasks, takes care of the formation and maintenance of the state monitoring network. Roshydromet is collaborating with PEEX Program and with the Moscow PEEX Office at the Moscow State University. The aim is to find joint interests and provide education in a frame of PEEX research program and have dialogue, how to enhance comprehensive atmospheric observation infrastructure and practices.
Here we present an overview of the spread and diversity of their network.
For some sites data can be obtained from Rp5.ru., which contains forescast and achive data for continuous stations. For more request contact in Roshydromet, Dr. Anna Timofeeva ipkfin@yandex.ru, Advanced Training Institute, Director of WMO Regional Meteorological Training Center in the Russian Federation and Prof. Sergey Chalov hydroserg@mail.ru at Moscow State University, Vice Dean of the Faculty of Geography, Director of PEEX Office.



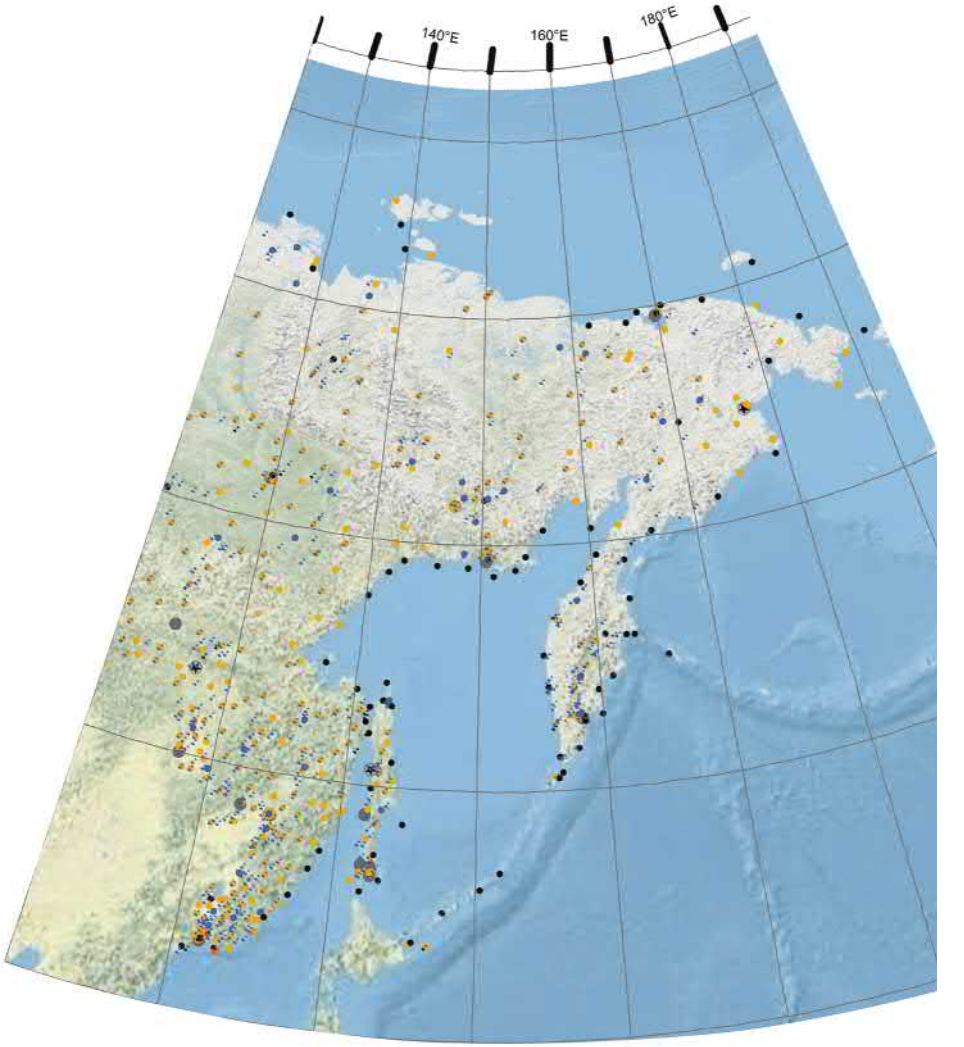
Map A3. General view of the network and the main types of measurement sites. Please, consult provider for accurate information.



Map A4. Close-up of the West section. Please, consult provider for accurate information.

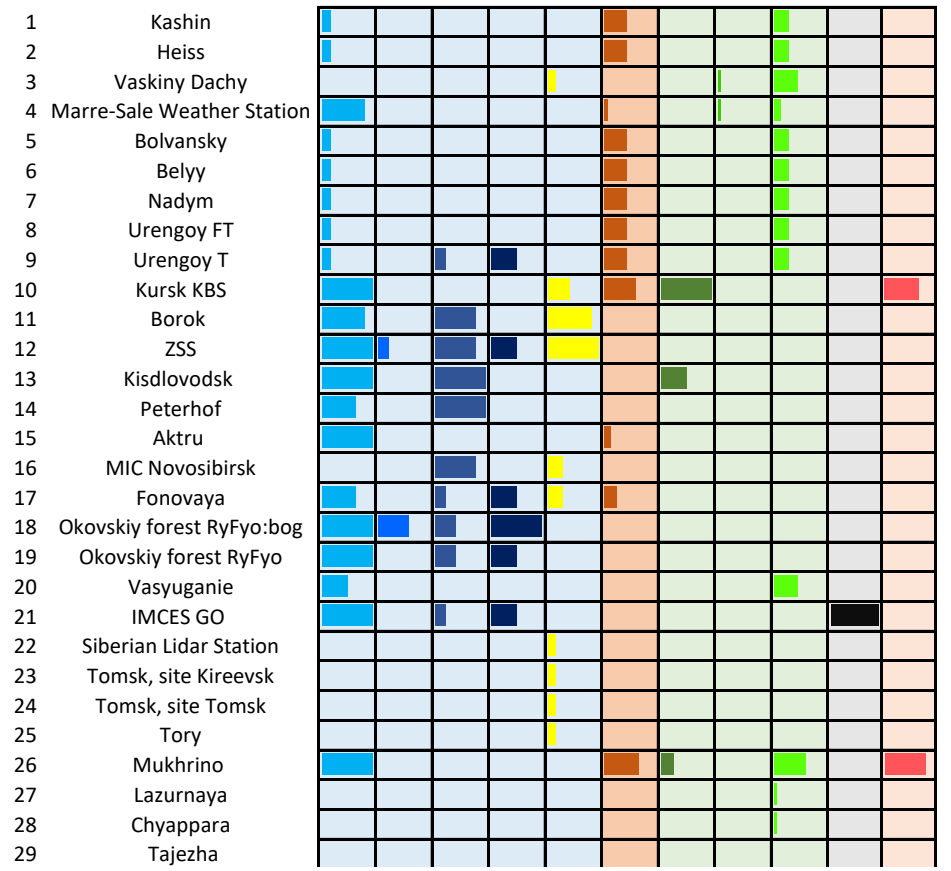


Map A5. Close-up of the center region. Please, consult provider for accurate information.



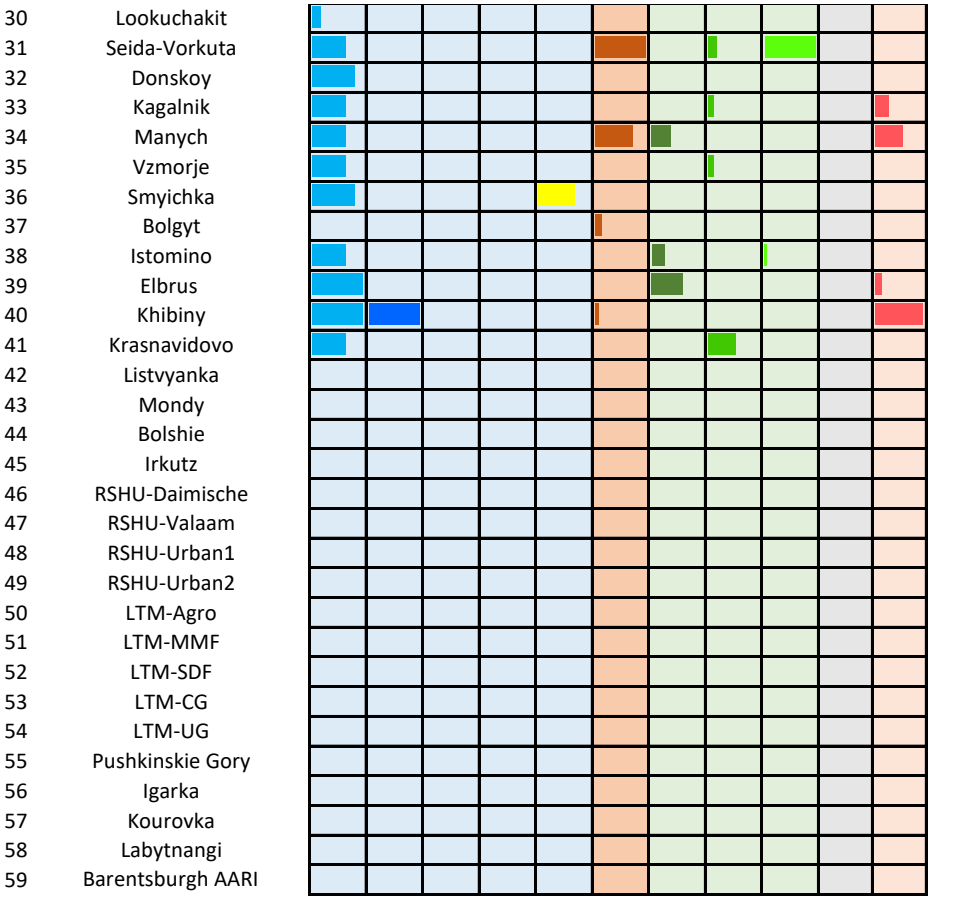
Map A6. Close-up of the East section. Please, consult provider for accurate information.

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



Standard meteorological and radiation
Detailed radiation
Atmospheric concentrations
Other atmospheric
Fluxes with micrometeorological techniques
Soil
Forest
Inland water ecosystems
Peatland
Urban area
Biodiversity

Table A1. continuation



Horizontal bars represent the % or meaurements that the station covers in relation to the possible measurements listed in the PEEX 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.

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www.atm.helsinki.fi/peex