

**FORUM À LA
CROISÉE DES
SCIENCES :
INTERAGISSEZ,
IMAGINEZ,
INNOVEZ.**

Forum interdisciplinarité
9&10 janvier 2019
Hôtel de Région
Toulouse



Avec le soutien de



InHERA (Idex Transversalité 2014-2016) : Interactions Homme - Environnement dans les régions Arctiques

Alexei KOURAEV-LEGOS-OMP

Porteur : E. Zakharova. **Participants** (9 labos) : **AMIS** (E.Crubézy, C.Theves, P.Gerard, L.Romanova, D.Nikolaeva), **CNRM/GAME** (C.Delire, B. Decharme), **ECOLAB** (J-L.Probst, R.Teisserenc, L.Gandois, L.Lambs, M.Barret, T. Le Dantec), **GET** (J.Viers, L.Orgogozo), **LA** (D.Serça), **LEGOS** (E.Zakharova, A.Kouraev, F.Rémy), **CESBIO** (Y.Kerr, S.Bircher, A.Mialon), **LEREPS** (N. Gallai), **UMR831**(D.Texier)

The aim of the InHERA project was to establish the network and enhance the framework for studying the consequences of climatic and environmental changes in North Siberia on the human communities taking into account historical and modern aspects. The project included about 20 researchers and engineers of the OMP and CNRM-GAME (environmental sciences), AMIS (anthropobiology) and LEREPS (socio-economy)

Context:

CNRS-Russia GDRI CAR-WET-SIB (2014-17) “Carbon, Water and Metal Transport in Wetlands of Siberia”, biogeochemical (GET, ECOLAB, SIF, TSU, ISSA) and hydrological frameworks (LEGOS, TSU, GET)

CFSFR - French Siberian Center for Education and Research (Environment, Biosphere, Climatic change)

ANR CEP&S CLASSIQUE (2012-2016) “Climat, Agriculture and Siberian Society: which evolution?”

Various national and international projects



Reinforcing the network

- Workshops and meetings: 2015 with external participants from LAS (social anthropology) and NE Federal University, Yakutsk (socio-economics), 2016 (11 organisations from France, Germany and Russia)
- Conferences (LYON workshop 2015 – Lower Yenisey; ICOP Permafrost Potsdam 2016; EcoSummit "Ecological Sustainability: Engineering Change" 2016 etc)
- Joint field work (Yakutia, Western Siberia, Yenisey/Igarka, Baikal, Hovsgol)
- Publications and presentations (>30)
- Contacts with French embassy in Moscow, French permafrost association (AFDP), IBPC, YPI; exchange visits (N. Tananaev, A. Desiatkin)



AST Arctique => Toulouse Arctic Initiative

CESBIO, ECOLAB, GET, LA, LEGOS (OMP), AMIS, CLS, CNRM-Game, CERFACS, Mercator

- Create a network of researchers from various scientific domains to facilitate data collection, use of tools, exchange of ideas and creation of new projects;
- Give visibility to studies done by OMP researchers and partner laboratories in Toulouse with the prospective to become a competitive Arctic center at national and international level.
- 3 themes: Permafrost (hydrology-vegetation-biogeochemical cycles); IDEX InHERA; Sea ice retreat and its consequences

<http://www.obs-mip.fr/recherche/actions-transversales/arctique>



TOULOUSE ARCTIC INITIATIVE
A scientific group conducting the research and teaching on arctic problems

We investigate arctic terrestrial and ocean systems under the recent climate change to improve our understanding of human adaptation to environmental changes

Permafrost

- Hydrology
- Wetlands balance
- Thermokarst lakes
- Soil moisture
- Freeze-thaw
- Lake ice
- Snow cover
- Runoff modeling

Arctic Ocean And Atmosphere

- Sea Ice**
Snow cover
Ice freeboard
Ice thickness modeling
- Atmosphere**
Polar low

Arctic Environment And People

- Human**
Archaeological fields
Genomes and paleogenomes
Cold Adaptation and Evolution
- Environment**
Domestication
Infectious diseases
Nutrition

Glaciers

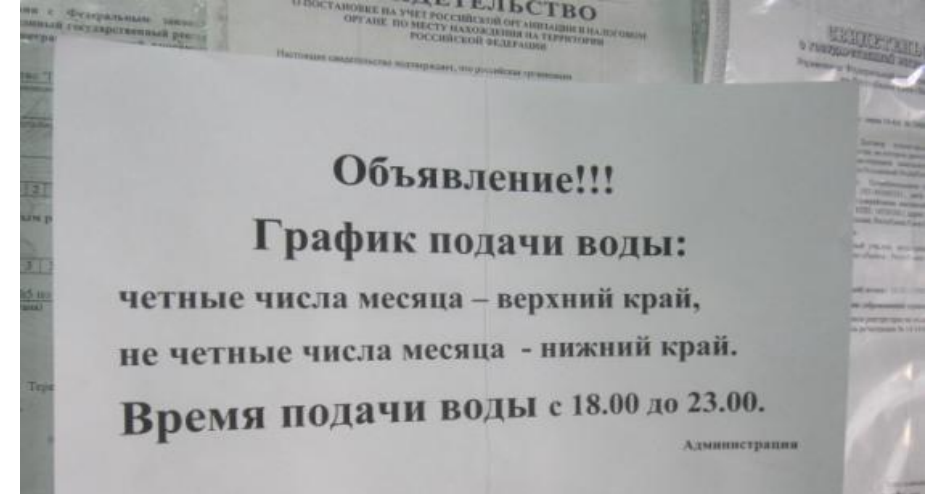
- Mass balance
- Ice dynamics (calving)
- Ice Sheets melts /discharge
- Sea level rise

Geochemistry

- River organic carbon
- Traces metals
- Lake sediments
- Hg river flux
- Greenhouse gases

LEGOS, ECOLAB, GET, CESBIO, LA, CNRM, AMIS, CLS, MERCATOR
<http://www.obs-mip.fr/observatoire/observatoire-arctique>

Environment and society: access to water, pastures and abandoned fields, transport (river crossing, winter routes), fires etc.



Projects and evolution

- 3 PhD (AMIS, IDEX + French Embassy in Moscow)
- FP7 TOMCAR Permafrost (2012-2016, ECOLAB)
- TOMCAR-SAT (EC2CO)
- JPI Climate SIWA "Siberian Inland Waters" (GET)
- BIO-CLIM-LAND center and journal at TSU
- FP7 MERCURY Isotopes (GET)
- ANR PROMETHEUS (2013-2016, GET)
- PARCS: Pollution in the Arctic Systems (Chantier Arctique)
- CNES Permasensing (LEGOS, M2C, IBPC)
- APT (Acceleration of Permafrost Thaw By Snow) BNP Paribas (CNRM-Game)
- ERALECC (2016-2018) "Eurasian Lakes in a changing climate" ERA.Net RUS Plus S&T
- CNRS-Russia IRN "TTS – Tundra to Steppe" (2020-2023), under construction
- New contacts, new cooperation, new field work, new ideas