



Permafrost Young Researchers Network Newsletter, October 2017

Dear PYRN members,

We hope you're doing well after field works!

In this newsletter, you will find some updates on recent PYRN activities as well as information on the upcoming events in 2017 and 2018.

*Don't hesitate to contact us for further information,
PYRN ExCom*

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Twitter: @PYRN_official

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News

Please welcome our three new PYRN National Representatives!

Emil Mariov Gachev – Bulgaria

Emil Mariov Gachev is an Associate Professor (PhD in Physical Geography) at the Department of Geography, Ecology and Environmental Protection, Faculty of Mathematics and Natural Sciences of the South-West University “Neofit Rilski” in Blagoevgrad, Bulgaria. His research interests are present and former mountain glaciation, small glaciers, rock glaciers, permafrost, geography of mountain environments, geomorphology, hydrology, karst processes and speleology.



Renato R. Colucci – Italy

Renato R. Colucci works in the climate and paleoclimate research group of ISMAR at the Department of Earth System Sciences and Environmental Technology, Italian CNR. His research focuses on glacial and periglacial geomorphology of high-altitude and high-latitude environments, both in the Alps



(Eastern Alps, Dolomites, Stelvio, Austria, Slovenia, Switzerland) and outside Europe (Cordillera Andina – Chile, Karakorum-Pakistan, Antarctica), and their interactions with the climate system.

Jannik Martens – Sweden

Jannik started his PhD studies in Applied Environmental Science at Stockholm University in 2017. His research project investigates historical and geospatial variability of permafrost carbon that was remobilized and transported to Arctic Ocean shelf sediments. This is studied using molecular and isotopic analysis of sediment cores and surface sediments from the Arctic Ocean.



You can find more about these and other PYRN National Representatives here:

<https://pyrn.arcticportal.org/national-representatives>

Finnigan Award for Northern Research

The Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (NAPEG) is pleased to announce the inauguration of a new award to provide a student with funding to attend the Geoscience Forum. The Finnigan Award for Northern Research is inspired by Dr. Craig Finnigan.

Please visit NAPEG to apply for the Finnigan Award.

www.napeg.nt.ca/news-item/3346279-new-finnigan-award-for-northern-research

Simon Dumais

Past Events

The XI International Symposium on Engineering Permafrost



PYRN Russia organized a meeting on September 6th, 2017 in the city of Magadan in frame of the XI International Symposium on Engineering Permafrost. The meeting aimed to strengthen



scientific and technical collaboration between Chinese and Russian organizations.

Two senior permafrost researchers (Zhi Wen and V.P.Vlasov) presented their research on pile and linear (pipeline/highways) constructions adaptation to climate change and new approaches in Magadan area and in China. Chinese colleagues advertised opportunities for PhD students and post Docs to study and work in Chinese research institutes and universities. The Ministry of Science and Technology and the Chinese Academy of Sciences fund international cooperation in China. The discussion was followed by a dinner with local dishes! A

collaborative Russian-Chinese spirit was in the air during this PYRN meeting!

Young scientists held one third of the presentations. Five young scientists (3 from Russia and 2 from China) received awards and valuable prizes for their presentations:

- Zhang A.A., PhD student of the geocryology department at Lomonosov MSU, "A ground-penetrating radar study for assessing the effectiveness of embankment insulation at the Amur-Yalutsk railway";

- Zhang H., PhD student of the State Key Laboratory of Frozen Soil Engineering at the Northwest Institute of Eco-environment and Resources CAS, "Pore-water pressure variation in warm and ice-rich frozen soils under loads";

- Bazhin K.I., Junior Researcher at the Melnikov Permafrost Institute SB RAS, "Application of electrical resistivity tomography to assessing the condition of dams";

- Naberezhnyi A.D., Leading engineer at the Ammosov North-Eastern Federal University, "Research on bearing capacity improvement of friction pile foundations";

- Yang Lu, PhD student at the College of Water Conservancy and Hydropower, Hohai University, "Surface fractal assessment of cracks in clayey soils subjected to cyclic freezing and thawing".

Julia Stanilovskaya, Kirill Bazhin

PYRN meeting at National Argentine Congress of Geology

A meeting from the Argentine PYRN community was held during the XX National Argentine Congress of Geology, from 7 to 11 August in San Miguel de Tucumán, Argentina.

Participants from Tucumán, Mendoza, Buenos Aires, San Juan, Río Negro and Chile assisted to the encounter that also counted with the special participation of senior permafrost researchers. As many of the young assistants were enthusiastic students of bachelor degree, the first part of the meeting consisted on a short presentation about PYRN activities around the world and Argentinian researchers' contribution to permafrost science. A round table led by Carla Tapia (IANIGLA) followed this short talk. The interchange was fluid and we could share experiences from young researchers from all over the territory. Permafrost research is currently experiencing a renewed interest in the country: new participants are taking the post over traditional research's topics but also, want to undertake new challenges. Hot topics are related to determination of permafrost extension especially along all the Andes, new

remote sensory techniques for mapping and monitoring it, regarding water request and supply in periglacial environments and mountain permafrost degradation risks.

Another interesting part of the meeting focused on the communications problems, inside the scientific circle, between the scientists and communities and with the policy makers. We discuss about recommended language in each one of the scenarios and the necessity of spread the knowledge into the local communities living over permafrost areas, as well about to develop a good with them.

The organizer express her gratitude to all the participants as well to the XX Argentine Geological Congress executive committee, who provided the facilities to host the PYRN Argentina meeting. Thank you also to Dr. Ana Lía Ahumada who helped with the logistics and gave us all her kindness during the meeting.

Carla Tapia

Presentation about permafrost in India

Shridhar Jawak (NR India) gave a presentation on "Remote Sensing of the Cryosphere" at Symbiosis Institute of Geoinformatics, Symbiosis International University, Pune, Maharashtra-411016, India. (Date: 16 June 2017).



Asian Conference on Permafrost - ACOP 2017



Young researchers attending the PYRN ice-breaker at ICOP, Hokkaido University Museum

The 2nd Asian Conference on Permafrost was held July 2 – 4 2017 at Hokkaido University, Sapporo, Japan. The conference was a definite success and covered a wide range of permafrost research and engineering topics through a total of 141 presentations. PYRN members were well represented in general, and 20 received financial assistance to attend the conference.

here were two winners of the PYRN-IPA Award for Best Oral Presentation:

- Yury A. Dvornikov for his presentation "Gas-emission craters on Yamal and Gydan Peninsulas future lakes".
- Matthias B. Siewert for his presentation "High-resolution mapping and spatial variability of soil organic carbon in permafrost environments".

Congratulations to these two talented young researchers!

Simon Dumais

Upcoming Events

Arctic Change 2017



December 11 – 15 2017, Québec City Convention Centre, Québec, Canada

Early Bird Registration Deadline: **Friday 3 November 2017**

Arctic Change 2017 will bring together leading Arctic researchers, graduate students, Northern community representatives, government and industry partners and stakeholders from all fields. During the week, the world's foremost Arctic scientists will discuss the emerging global challenges and opportunities arising from climate change and modernization in the circum-Arctic. With over 1500 participants expected to attend, Arctic Change 2017 will be one of the largest trans-sectoral international Arctic research conferences ever held in Canada.

Student Day

Held in a one-day format on Monday, December 11, the International Arctic Change 2017 Student Day will provide an exciting opportunity for students from around the world to build and strengthen relationships, partake in dynamic discussions and learn from each other's research experiences. Student Day is expected to be one of the largest international gatherings of students engaged in Arctic research and is open to all interested individuals and we welcome the participation of students, researchers and representatives from northern communities, Inuit organizations, government and industry.

Conference website:

<http://www.arcticnetmeetings.ca/ac2017/>

Simon Dumais

Portuguese Polar Sciences Conference



Portuguese Polar Sciences Conference
6-7 NOVEMBER 2017, UBI-COVILHÃ

Conference website:

<http://cienciapolar.segal.ubi.pt>

Alexandre Nieuwendam

Students in Polar and Alpine Research Conference (SPARC)

We are happy to announce that the 3rd SPARC meeting will be hosted between 16 and 18 April in Brno, Czech Republic. The conference is open for all young researchers working both in Geo- and Bioscience in Polar or Alpine regions. The first announcement will be released in the following weeks.

To get more info, follow us on: <https://www.facebook.com/GeoPolar-Brno-667809679997442/> or contact us via e-mail: geopolarbrno@gmail.com

Looking forward to meeting you in Brno!

Filip Hrbacek

The 45th Annual Yellowknife Geoscience Forum

Website:

www.nwtgeoscience.ca/yellowknife-geoscience-forum

Date: November 14 - 16, 2017, Yellowknife, Canada

Early Bird Registration Deadline: Friday 27 October 2017

Abstract Submission Deadline: 11:59 pm MT Friday 20 October 2017

The Yellowknife Geoscience Forum provides an intimate setting for delegates from industry, academia, and government to exchange information on Mineral and Petroleum Exploration, Mining Activities, and Geoscience Research in Canada's North. The Forum consists of a trade show and a technical program.

Simon Dumais

Sentinel North International Arctic Field School

Sentinel North International Arctic Field School – Two weeks remaining to submit your application

The deadline to submit your application to the first Sentinel North International Arctic Field School (IAFS) is **October 29**.

Taking place in Iqaluit, Nunavut from March 2 to 9, 2018 under the theme "A Changing Cryosphere: From Sensors to Decision Making", the IAFS offers a transdisciplinary training program that addresses the scientific and socio-economic issues linked to the changing Arctic cryosphere.

Supported by internationally renowned professors and local experts, the IAFS provides a unique occasion to develop a hands-on and integrated expertise with a wide range of disciplines such as optics/photonics, arctic ecology, chemistry, geology and human health.

We encourage graduate students and postdoctoral fellows of all relevant fields of research to seize this opportunity.

www.sentinelnorth.ulaval.ca/iqaluit2018

UArctic Congress 2018

The University of Oulu and the University of Helsinki are excited to invite you to the second UArctic Congress, September 3-7, 2018.

Key dates: Call for Session proposals - October 15, 2017

Session selection - mid-December, 2017

Call for Abstracts - from January to end of March, 2018

Congress Registration opens - spring 2018

Requests for Visa invitations - spring 2018

Held in Finland, the UArctic Congress 2018 will begin in Oulu from September 3-6, and conclude in Helsinki on September 7. The UArctic Congress 2018 will bring together key UArctic meetings and a science conference into one single gathering, including business meetings of the Council of UArctic, Rectors' Forum, Student Forum, and Thematic Networks & UArctic Institutes Leadership Team. The Congress is an integral part of Finland's Arctic Council chairmanship program, and open to the public. The event will highlight the themes and priorities of the Finnish chairmanship, including the goals of the United Nations' 2030 Agenda for Sustainable Development, supporting gender equality, and the Paris Agreement under the UN Framework Convention on Climate Change. With the aim to foster contacts and enhance networking, the biennial UArctic Congress brings

together institutional leaders, indigenous representatives, academics, scientists and students from around the circumpolar north and beyond. Together with partners, policy makers, and other actors, the Congress strives to take the Arctic agenda forward by creating and strengthening collaborations that produce new findings and solutions for the future of the Arctic region. The UArctic Congress 2018 will feature Science and Meeting sections, including:

Sessions aligned with the four priorities of Finland's chairmanship; i.e. environmental protection, connectivity, meteorological cooperation, and education.

- Acclaimed keynote speakers and scientific experts presenting their views and latest research.
- Formal meetings for representatives of the Council of UArctic and UArctic Rectors' Forum.
- Side-meetings and events.
- Student events.
- An exciting cultural and social program.

Mark your calendar and keep yourself informed via the UArctic Congress 2018 webpages and our social media feeds. We look forward to seeing you in Finland in September 2018!

AIC 2018 - Transportation Infrastructure Engineering in Cold Regions



AIC 2018 - Transportation Infrastructure Engineering in Cold Regions

Tue, May 01, 2018 - Thu, May 03, 2018
Sisimiut, Greenland

Communities in the Arctic and other cold regions are strongly dependent on well-functioning transportation infrastructure to sustain business opportunities, health and general well-being. For isolated communities (most coastal Arctic communities) regional or international travel and transportation must rely on air or sea transport. A harsh climate and unstable weather conditions impact constructions and make navigation challenging.

Faced with social and industrial changes, transportation infrastructure in these regions must be adapted to larger traffic loads and changing transportation patterns. At the same time, climate change impacts on permafrost and ground stability, sea ice distribution and properties, changing wave regimes etc., pose severe challenges to transportation infrastructure.

The ARTEK International Conference 2018 offers an opportunity for participants from the industry, the public sector, the science community and other stakeholders to present, discuss and exchange ideas and experience on how to plan, design, construct, operate and maintain transportation infrastructure in cold regions.

The topical sessions of the conference are:

- Harbors and offshore constructions
- Design, construction and operation of harbors and offshore structures. Ice and wave impacts on structures. Ice-induced vibration. Ice gouging, coastal erosion and sediment

redistribution. Structural reliability in a changing climate.

- Vessel and boat traffic in icy waters
- Ice loads from sea ice and glacial ice. Design and strength of ships. Ship performance in ice, including ice resistance. Risk and safety. Regulations.

- Linear infrastructure
- Roads, power- and pipelines, sewers. Design and maintenance issues. Technical adaptation solutions. Design and maintenance approaches in permafrost regions.

- Airports and other large constructions
- Airstrips and other large constructions on land. Site investigations and material properties. Design solutions and operating conditions. Design and maintenance approaches in permafrost regions.

- Navigation, Positioning and Communication Systems

- Maritime e-navigation. GNSS assisted take-off and landing procedures. Space weather impacts on navigation in the Arctic. Sea ice and iceberg warning systems. Surveying and geographical information systems.

- Planning of physical infrastructure
- Socioeconomic and sociotechnical impacts of transportation infrastructure, planning infrastructure networks, business opportunities related to infrastructure.

You can find more information at: <http://www.conferencemanager.dk/AIC2018>

4th Snow Science Winter School

When and where: 11-17 February 2018, Col du Lautaret, France.

The cryosphere forms an integral part of the climate system of the Earth. Measuring the properties of the seasonal and perennial snow cover properties is therefore essential in understanding interactions and feedback mechanisms related to the cryosphere.

Snow is an extremely complex and highly variable medium, and all essential properties of seasonal

snow cover are challenging to measure. Diverse fields such as hydrology, climatology, avalanche forecasting and Earth Observation from space benefit from improved quantification of snow cover properties, in particular related to the snow microstructure.

The past 10 years snow science has seen a rapid change from a semi-quantitative to a quantitative science. Understanding physical and chemical processes in the snowpack

requires detailed measurements of the microstructure.

The 4th Snow Science Winter School will teach these advanced techniques, as micro-tomography, measurement of specific surface area by reflection and spectroscopy, near-infrared photography and high-resolution penetrometry. You will learn:

- State-of-the-art snow measurement techniques
- Understanding the physical processes responsible for the evolution of the snowpack
- Understanding vertically resolved snowpack models (Crocus, SNOWPACK) and larger scale land-surface models

Target audience:

Any graduate student or post-doc working on snow or in some snow related field, this year especially in remote sensing of the cryosphere, is welcome to participate. Those fields include everybody interested in cryospheric sciences.

Course structure:

The focus of this workshop lies on alpine snowpacks, field measurements and snowpack models combined with theoretical lessons in the classroom.

Field and laboratory measurements will be done in small groups of 3-4 students. Each group of students will have to prepare a report describing

the methods, results and interpretation, and a comparison between field measurements and snow modelling results.

The course corresponds to 3 ETCS-Points. The winter school is listed in the coursebook of the doctoral school at EPFL Lausanne. To receive full credit, a report taking 40 hours of homework must be written, based on the measurements during the course.

Location:

The course will be at Col du Lautaret in the buildings of the "Station Alpine Joseph Fourier" (N 45°02.112', E 6°24.064, 2100 m a.s.l) with direct access to field sites. The research facilities are working in summer as in winter time, and devoted to research projects or university trainings and courses (ecology, physiology, soil, water, snow, physics of the atmosphere, geology, landscapes, human sciences...). The platform is a part of the ANAEE-facilities project "Analysis and experimentations on ecosystems" coordinated by CNRS, INRA, and Université Grenoble Alpes. The location is ideal for atmospheric and environmental research in the alpine zone. Snow cover at the site persists typically from October to May, making the site very well suited also for snow-related studies.

More information you can find at: http://www.slf.ch/dienstleistungen/events/snowschool/index_EN