

SIBERIAN BRANCH OF  
THE RUSSIAN ACADEMY OF SCIENCES

LAVRENTYEV INSTITUTE OF  
HYDRODYNAMICS SB RAS

TROFIMUK INSTITUTE OF PETROLEUM  
GEOLOGY AND GEOPHYSICS SB RAS

NOVOSIBIRSK STATE UNIVERSITY

**The Fifth All-Russian Conference  
with International Participation  
“POLAR MECHANICS”**

**October 9-11, 2018**

Novosibirsk, Russia

**INFORMATION LETTER**

**The first** All-Russian Conference «Polar Mechanics» was held in June 2-9, 2012 in Novosibirsk scientific center. It was organized by Lavrentyev Institute of Hydrodynamics SB RAS. **The second** All-Russian Conference «Polar Mechanics» was held in June 3-5, 2014 in Saint-Petersburg and hosted by the Krylov State Research Center. **The third** International Conference «Polar Mechanics» was organized by Far Eastern Federal University in Vladivostok. It was held in September 27-30, 2016. **The fourth** All-Russian Conference «Polar Mechanics» was held in September 14-15, 2017

and was hosted by Arctic and Antarctic Research Institute.

**The objective** of the Conference is to coordinate work and to share information on the present state of studies in the field of polar mechanics and related sciences performed by scientific, scientific-and-technological and other groups and to define the priority areas of fundamental and oriented scientific research aimed to solve the problems of development and efficient use of Arctic and Antarctic resources.

**The actuality** of topic, which is traditional for the Conference “Polar Mechanics”, is defined by the problems of development of northern regions. The development of equipment and technologies, mining, the reconstruction of the Northern Sea Route under modern conditions, the construction and development of infrastructure of Arctic and Antarctic regions require to improve the methods of numerical and full-scale simulation of behavior of materials and structures, to develop the methods of predicting the natural and technological processes in high latitudes and under low temperatures. It is therefore necessary to perform large-scale fundamental, applied and engineering research to develop techniques used to predict and control phenomena, which are specific for the polar mechanics at the stage of developing a new technology and at the stage of designing new technical devices to develop northern regions.

The duration of presentations is planned to be 30 and 15 minutes and oral poster presentations are

also available. Each participant of the Conference can give only one oral presentation.

**The main research areas:**

- mechanical, tribological and rheological properties of ice;
- mathematical simulation in ice mechanics;
- simulated ice and ice model basins;
- geological and geophysical research in the Arctic;
- permafrost study and gas hydrates;
- singularities of construction and use of engineering structures under Arctic conditions: under permafrost conditions, in coastal and shelf zones, underwater construction work;
- mining and transporting of mineral resources under Arctic conditions;
- navigation under ice conditions;
- Arctic material science;
- hydrodynamics and computational fluid dynamics in Arctic technologies;
- environment: polar/Arctic and ocean.

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## REQUIREMENTS

We invite all colleagues to take part in the Conference. The papers will be selected by the Program Committee members basing on the abstracts. The program of the Conference will include original presentations reflecting modern state of science and technology in mentioned areas. For those who want to take part in the Conference and give a scientific presentation, it is necessary to register online and submit the abstract by e-mail. The deadline is **31 March 2018**. Abstracts volume should not exceed **1 page** of A4 format and should be emailed to the Organizing Committee of the Conference. The abstract template will be available at <http://conf.nsc.ru/polar-mech2018>. Except the original version, please, submit the abstract in PDF.

## IMPORTANT DATES

<b>31 March 2018</b>	Abstract submission and registration deadline
<b>31 May 2018</b>	Informing about paper acceptance
<b>1 July 2018</b>	Paper submission deadline
<b>9-11 October 2018</b>	The Conference

## PUBLICATION OF CONFERENCE PROCEEDINGS

The Conference proceedings are planned to be published in the Journal of Physics: Conference series that is indexed in Scopus and Web of

Science. The publication is available only for face-to-face participation and positive review. The deadline of English papers submission is **1 July 2018**. For more information about paper preparation, please visit the site of the Conference.

## REGISTRATION FEE

The registration fee is 5 000 rubles (3 000 rubles - for participants aged up to 30 years old). The additional fee of 4 000 rubles is necessary to be paid for publication of the Conference proceedings. The information of terms and ways of the registration fee payment will be given later.

## CONTACT US

The abstracts, questions and correspondences should be sent to the postal address:

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Lavrentyev Prospect, 15  
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