

## Welcome

Dear colleagues,

We are pleased to announce the **International Conference Cyber-Physical Systems and Control (CPS&C'2019)** which will be held from **10 to 12 June 2019** in **St. Petersburg, Russia**.

Cyber-Physical Systems (CPS) are a new generation of control systems and techniques which help promote prospective interdisciplinary research. A wide range of theories and methodologies are being investigated and developed in this area to tackle complex and challenging problems. Therefore, CPS can be considered as a scientific and engineering discipline that is set to make impact on future industrial and societal-scale systems characterised by deep integration of real-time processing, sensing, and actuation across logical and physical heterogeneous domains.

CPS&C'2019 is dedicated to the **35th anniversary of the partnership relations** between Peter the Great St. Petersburg Polytechnic University and Leibniz University of Hannover.

**CPS&C'2019** aims to bring together researchers and practitioners from all over the world and to reveal cross-cutting fundamental scientific and engineering principles that underpin the integration of cyber and physical elements across all application fields. The conference agenda includes keynote and plenary lectures, sessions and discussions.

Attendees of **CPS&C'2019** become a part of our scientific community and will have the opportunity to discover the magnificent city of St. Petersburg in especially beautiful period of White Nights.

We are looking forward to seeing you in June at Peter the Great St. Petersburg Polytechnic University which celebrates its **120th anniversary** this year.

### CPS&C'2019 Co-chairs

Professor Michael Krommer,	Professor Dmitry G. Arseniev,	Professor Ludger Overmeyer,
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<i>Vienna University of Technology</i>	<i>Peter the Great Saint-Petersburg Polytechnic University</i>	<i>Leibniz University Hannover</i>
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## Organisers

Leibniz University Hannover, Germany  
Peter the Great St. Petersburg Polytechnic University, Russia  
Vienna University of Technology, Austria

## Conference Scope

We shall be very pleased if you can present your paper.  
Please see the list of topics covered in the scientific programme.

### Fundamentals

Control Theory  
System Analysis  
Paradigms, Models and Architectures  
Methods and Algorithms  
Components and Structures  
Knowledge Base and Knowledge Management

### Technologies

Engineering  
Industrial Internet of Things  
Artificial Intelligence and Machine Learning  
Cognitive Systems  
Real-Time Systems  
Safety and Security Systems

### Applications

Smart Manufacturing  
Mechatronics and Robotics  
Human Digital Interfaces  
Networking and Telecommunications  
Transport and Logistics  
Energy and Smart Grid

## Conference Background

The conference draws upon the experience of previous research events that have focused on information technologies, system analysis, engineering and control and have been hosted by Peter the Great St. Petersburg Polytechnic University in partnership with leading European and Russian academic institutions. The most significant in series of these events are the International Conference System Analysis in Engineering and Control (since 1998), the Distributed Intelligent Systems and Technologies Workshop (since 2008), the International Scientific Symposium Automated Systems and Technologies (since 2014), the International Conference Network Cooperation in Science, Industry and Education (in 2016), each attended by hundred participants.

## Paper Submission and Key dates

### **8 April 2019 Abstract submission and Registration**

As the first step, authors submit only abstracts (up to 200 words) via the **EasyChair** conference management system (<https://easychair.org>).

Please follow the instructions of the EasyChair conference management system for creating your personal account. If you already have an account in the EasyChair, please use submission link:

**<https://easychair.org/conferences/?conf=cpsc2019>** and select option "enter as an author", then fill in the required fields on the page "New Submission".

### **29 April 2019 Final Paper Submission**

The camera-ready PDF documents with the text of papers are submitted via the EasyChair conference management system (<https://easychair.org>).

All papers should be in the range of 12 000-14 000 characters. The list of references should include at least 20 sources.

### **Origin, Motivation and Contribution**

Please note that all papers must be original and not simultaneously submitted to another journal or conference. All papers are supposed to present novel research results of international interest. The references to related work must be appropriate. Papers need to be related to the topics covered in the scientific programme of the conference.

All abstracts and papers must be submitted and presented in English.

All papers will be peer-reviewed by experts in the field based on originality, significance, quality and clarity.

### **Authorship**

Number of authors in a single paper is four person maximum. One person can be the author of not more than two papers. The corresponding author is the person chosen within the group to be responsible for all contact and correspondence with the periodical.

The corresponding author should ensure that all appropriate co-authors (and no one inappropriate co-authors) are included on the paper, and that all co-authors have seen and approved the final version of the paper and have agreed to its submission for publication.

Accepted full papers will be published in the conference proceedings. Abstracts and selected papers will be published in Scopus Indexed journals.

### **10 May 2019 Deadline for Authors Registration**

## Conference Chair

**Professor Michael Krommer**, Vienna University of Technology, Austria

**Ludger Overmeyer**, Leibniz University Hannover, Germany

**Dmitry G. Arseniev**, Peter the Great St. Petersburg Polytechnic University, Russia

## Scientific Committee

**Alexander K. Belyaev**, Institute of the Problems of Mechanical Engineering of the Russian Academy of Sciences, Russia

**Alexey A. Bobtsov**, St. Petersburg National Research University of Information Technologies, Mechanics and Optics, Russia

**David Castells-Rufas**, Autonomous University of Barcelona, Spain

**Joachim Denil**, University of Antwerp, Belgium

**Tatiana A. Gavrilova**, St. Petersburg State University, Russia

**Galina V. Gorelova**, Southern Federal University, Russia

**Stein E. Johansen**, Institute for Basic Research, FL, USA

**Arto Kaarna**, Lappeenranta University of Technology, Finland

**Heikki Kälviäinen**, Lappeenranta University of Technology, Finland

**Nicos Karcanias**, University of London, Great Britain

**Branko Katalinic**, Vienna University of Technology, Austria

**Sergey V. Kuleshov**, St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences, Russia

**Michael S. Kupriyanov**, St. Petersburg Electrotechnical University "LETI", Russia

**Nikolay V. Kuznetsov**, St. Petersburg State University, Russia

**Dmitriy A. Novikov**, Institute of Control Sciences of the Russian Academy of Sciences, Russia

**Leonid I. Perlovsky**, Harvard University, MA, USA

**Rudolf Pichler**, Graz University of Technology, Austria

**Vladimir A. Polyansky**, Institute of the Problems of Mechanical Engineering of the Russian Academy of Sciences, Russia

**Oliver Riedel**, University of Stuttgart, Germany

**Andrey L. Ronzhin**, St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences, Russia

**Vyacheslav P. Shkodyrev**, Peter the Great St. Petersburg Polytechnic University, Russia

**Hans-Rolf Tränkler**, Bundeswehr University Munich, Germany

**Hans Vangheluwe**, University of Antwerp, Belgium

**Violetta N. Volkova**, Peter the Great St. Polytechnic University, Russia

**Valeriy V. Vyatkin**, Luleå University of Technology, Sweden

## Organising Committee

**Vyacheslav P. Shkodyrev** Chairman

**Aleksandra V. Loginova**

**Vyacheslav V. Potekhin**

**Konstantin K. Semenov**



## Conference fee

Participation fee € 300\* / RUB 22500\*

Student fee € 50 / RUB 3750

\*The participation for scientists from partners' universities is defined by a special fee level.

Conference fee does not include accommodation payment.

The costs of travel and accommodation participants cover themselves. All payments from the Russian citizens and organisations are made in rubles.

## Accommodation

The Organising Committee can help conference attendees with booking accommodation in St.Petersburg hotels.

## Venue

29, Polytechnicheskaya Str., Scientific Research Building,  
28 Grazhdanskiy Av., Resource Centre of the International campus

Metro Polytechnicheskaya, 195251, St.Petersburg, Russia

## Organising Committee Contacts

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[www.cpssc.spbstu.ru](http://www.cpssc.spbstu.ru)



# International Conference Cyber-Physical Systems and Control

CPS&C'2019

[www.cpssc.spbstu.ru](http://www.cpssc.spbstu.ru)

St. Petersburg, Russia  
10-12 June 2019