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**LOCAL ORGANISING COMMITTEE**

**Chair:** João Abel Peças Lopes, Faculty of Engineering of University of Porto and INESC TEC

**Conference Secretariat:**  
e-mail: secretariat@pscc2020.pt  
website: www.pscc2020.pt

**THE CITY**

Welcome to Porto! Also known as Cidade Invicta (invincible city), Porto is the second largest city in Portugal and one of the major urban areas of the Iberian Peninsula. Located along the Douro River estuary in northern Portugal, Porto is one of the oldest European centres and its historical core has been considered a World Heritage Site by UNESCO since 1996.

The city of Porto dates back to the Roman Empire. Its combined Celtic-Latin name, Portus Cale, has been referred to as the origin of the name “Portugal”. Port wine, one of Portugal’s most famous exports, is named after Porto, since the metropolitan area, and in particular the cellars of Vila Nova de Gaia, were responsible for the packaging, transport, and export of fortified wine. In 2014 and 2017, Porto was elected The Best European Destination by the Best European Destinations Agency. Porto is also considered an innovation ecosystem, thanks to its universities, such as the University of Porto, its technological institutions, such as, INESC TEC and the number of startups and spinoff companies that have been created in the last years.
DATA ANALYSIS AND COMPUTATION APPLIED TO POWER SYSTEMS

- Data-driven modelling techniques
- Machine learning, statistics, and computational intelligence
- Management and utilisation of big data
- Mathematical and computational issues in modelling and simulation
- Forecasting methods
- Condition monitoring and diagnostics

Techniques of interest include:

- Modelling and simulation
- Optimisation and mathematical programming
- Uncertainty and risk management methods
- Control theory and control frameworks
- Communication technology
- Signal processing
- Computational intelligence including evolutionary techniques, Artificial Neural Networks, etc.
- Machine learning and statistics
- Semantic web technologies

PAPER TYPES

Four types of papers are sought:

TYPE 1 New approaches and techniques for modelling, analysis, or control of power systems.
TYPE 2 Improvements in methodologies or modelling currently applied in the power system domain.
TYPE 3 Case studies and experience in the application of computational methods to modern power systems challenges.

TECHNICAL PROGRAMME

The technical programme of the conference includes:

- Presentation of accepted papers
- Panel sessions
- Invited presentations on selected topics
- A one day tutorial (optional)

INSTRUCTIONS TO AUTHORS

The Power Systems Computation Conference (PSCC) has become one of the most outstanding events in the area. With a change of pace from meeting every 3 years to every two years, PSCC provides a truly international forum for the regular exchange of knowledge and experience on the latest developments in this area.

PSCC addresses theoretical developments and computational aspects of electric power systems research, with applications ranging from micro-grids to megagrids. There is an emphasis on modelling and simulation for understanding a system of components, plants, or actors, the interactions between them and their collective behaviour, and methods to inform decision-making in power systems. Contributions might comment on analytical techniques, modelling challenges, and complex software engineering issues as well as what the analyses say with respect to today’s and the future’s power system challenges. Thus, papers from utility and manufacturing industry engineers are just as welcome as those from academic researchers.

The following list of topics is not exhaustive but is offered in order to help prospective authors identify what is likely to be in scope.

ASSESSMENT OF SYSTEM ISSUES IN THE PRESENCE OF UNCERTAINTY OR UNBUNDLING:
- Power system planning and operation
- Asset management
- Machine integration of renewable energy resources
- Distributed storage systems
- Power system economics, energy markets, and regulation
- Power system reliability and security
- Uncertainty and risk management methods

MOELLING AND ANALYSIS OF POWER SYSTEM PERFORMANCE AND CONTROL
- Power quality
- Electro-magnetic transients on a system
- Power electronics and HVDC as part of a power system
- Flexible demand
- Aggregation of distributed energy resources
- Power systems and electro-mobility
- Power systems as part of multi-energy systems
- Power systems and transportation
- Distribution system monitoring, operation, and control
- Aggregation of distributed energy resources
- Flexible demand
- Power electronics and HVDC as part of a power system
- Electromagnetic transients on a system
- Power quality

INTEGRATED MODELLING AND OPERATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) IN POWER SYSTEMS
- Cyber security in power systems operation and control
- ICT-driven intelligent and autonomous controls
- Modelling of cyber-physical energy and communication systems

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