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Konferenzbeiträge / Atti / Proceedings

Building Simulation Applications BSA 2019

4th IBPSA-Italy Conference
Bozen-Bolzano, 19th–21st June 2019

Edited by
Giovanni Pernigotto, Francesco Patuzzi,
Alessandro Prada, Vincenzo Corrado, Andrea Gasparella

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Preface

Unlike the previous editions, the fourth Building Simulation Applications BSA 2019 Conference took place in June, from 19th to 21st, instead of during the winter period. For the biennial conference hosted by the Free University of Bozen-Bolzano, IBPSA Italy had to double its efforts, considering its concurrent commitment to the organization of Building Simulation 2019 in Rome.

Even so, BSA 2019 featured more than 60 participants and around 130 different authors, with a significant presence of delegates from abroad and, in particular, from Austria. A different review process was introduced, with the full paper submission and review following the conference. Based on this, only 40 out of the 54 works presented during the conference in two parallel sessions were accepted for inclusion in this proceedings book.

The initiatives for students and practitioners offered in the previous edition were renewed. As regards the former, new editions of the "Student School on Building Performance Simulation Applications" – this year dealing with indoor lighting simulation and building acoustics simulation – and the "Student Award" were organized. Similarly, the "IBPSA Italy Round Table for Designers and Practitioners" took place to discuss current trends, criticalities and the potential of the use of building simulations in professional activities.

Regarding the main topics analysed in the last edition of Building Simulation Applications, in addition to the analysis of building energy performance, particular attention was paid to hygrothermal simulations of building components, the development of advanced controls for HVAC components – particularly, heat pumps, urban simulation and urban weather data – and the integration of BIM solutions in building design. A special and novel focus for the conference was acoustics, with three dedicated sessions and 15 presentations, ranging from simulations of acoustic comfort and room acoustics, to the acoustic behaviour of components and structures.

Interesting overviews of current trends and the development of building simulation tools and methods were offered in the two keynotes hosted during the conference. Lori McElroy, current IBPSA President, spoke about "Building Performance Simulation – Future Trends and the Role of IBPSA", and Vincenzo Corrado, former IBPSA Italy president, discussed recent developments in technical standards in his speech "Energy Performance Assessment of Buildings in a Legal Context: New Standards and National Trends".

Finally, Ardeshir Mahdavi (Technische Universität Wien, Austria – Department of Building Physics and Building Ecology) offered a special lecture about building simulations to the PhD students present at the conference, titled "Some lateral thoughts on building performance simulation", engaging all attendees in some critical reflexions on the uses and applications of building performance simulations.

With the success of the 2019 edition, six years after the first conference, BSA has been confirmed as a lively expression of the IBPSA national Building Simulation community, its commitment to research, its attention to practice, and its international connections.

Andrea Gasparella, Free University of Bozen-Bolzano