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Preface

The digitalisation determines a high level of increased productivity in any domain that was applied before. Digital transformations in Civil Engineering are thriving today on gaining precedence to traditionally dedicated computation to construction design. The need for the remote control of the construction process to meet quality exigencies, budget constraints, and duration, for balancing risk evaluation and risk mitigation, for new accuracy levels in predicting soil-structure interaction in every unique environment, for sustainability and circular economy viable in the construction sector require a multiverse approach in our Conference - Computational Civil Engineering CCE2021.

This year more than ever, we become open to all issues addressing the future of our profession as civil engineers, architects, structural engineers, MEP engineers a.s.o. Specialization in knowledge by following the separation of interests is falling apart in the world where connectivity is available for everyone. The subjects of interest for this conference may look singular items on the list, still they belong to each construction and the key ingredient is team work and the shared value is cooperation.

The pandemic, climatic and economic crises are converging to trigger a massive competition to find answers and fierce determination to share knowledge and forge alliances between all stakeholders in the construction sector. We invite architects, engineers with interests in material, constructions, chemical, computer, energy, building services, management, and economy domains to join this conference with their scientific contributions and competence on 27th-29th May 2021, in Iasi – Romania.

The Conference Computational Civil Engineering become traditional (since 2003).

The 16th edition CCE2021 was organized by Faculty of Civil Engineering and Building Services of Iasi in partnership with the International Centre for Numerical Methods in Engineering (CIMNE) Barcelona Spain, the “Anton Sesan” Civil Engineering Academic Society Iasi and the “Matei Tetu-Botez” Academic Society Iasi, Romania. We were very honoured to collaborate for conference organizing with the “G.M. Cantacuzino” Faculty of Architecture Iasi, the Technical University of Civil Engineering Bucharest, the Faculty of Civil Engineering Cluj-Napoca and the Faculty of Civil Engineering Timisoara. Also, we were glad for support from our partners Technical University of Berlin, Odessa State Academy of Civil Engineering and Architecture, Unitec Institute of Technology Auckland and University of Leeds.

The scientific event was held on May 30th-31st on line using Zoom platform.

CCE2021 aimed to bring together leading academic scientists, researchers, practitioners, numerical analysis programs developers to exchange / share their experiences to the Computational Civil Engineering domain to share their research findings to the theoretical and practical levels.

The proposed topics for CCE2021 edition of the conference was the following:

- Computer Aided Design and Engineering
- Computational Methods in Civil Engineering
- Computational Fluid Dynamics
- Computer-Assisted Management in Civil Engineering
- Numerical Analyses of Civil Engineering Structures
- Computer Aided Training
- Civil Engineering Database
- Software for Civil Engineering
In plenary sessions were presented very interesting and up-to-date exposures of the keynote speakers, well-known researchers or practicians in civil engineering domain:

- Prof. Dr. Pere Roca, Technical University of Catalonia (UPC), Spain – Studies of the structure of Mallorca Cathedral. The contribution of numerical methods
- Prof. Dr. Wynand Steyn, University of Pretoria, South Africa - Improving livelihood through Civil Engineering research
- Dr. John Cribbs, Wentworth Institute of Technology, U.S.A. - Building Information Modeling (BIM) Workflows to Enable Cross-Disciplinary, Stakeholder Collaboration
- Prof. Dr. Ir. Pieter de Wilde, University of Plymouth, UK - The Energy Performance Gap - Challenges in Computational Building Engineering
- Arch. Karol Argasiński, BIMfaktoria, buildingSMART Polish Chapter, Poland - Pointcloud workflows in architectural HBIM practice
- Dr. Gabriel Barbat, International Centre for Numerical Methods in Engineering, Spain - Finite Element Modelling of Quasi-brittle Fracture with Enhanced Accuracy

This year, the online organization offered an opportunity for all the participants make it easy for the researchers and experts from 12 countries to attend CCE2021.

The organizers want to express gratitude to all members of the Scientific Committee and the reviewers, and welcomes the speakers, papers presenters and participants of this conference and wish all of you a fruitful event.

Finally, but not at the end, thanks all sponsors and individuals who have contributed to the organization and success of this special event CCE2021. Hope to meet them again to the next edition CCE2023 at the end of May.

More information about this scientific event can be found on the conference website www.cce.ci.tuiasi.ro.