Modeling and simulation of concrete structures: RECENT ADVANCES

TRACK Number: 1000 Computational Solid Mechanics

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ABSTRACT

Concrete is the most widely used man-made material in existence, second only to water as the most-consumed resource on the planet. The worldwide construction of various types of structures relies heavily on concrete. Cement is the source of about 8% of the world’s carbon dioxide (CO2) emissions. Concrete is a continuously developing material. As it changes and evolves, new tools are needed for the analysis, modeling and simulation of the material behavior itself and the structures that are made of it. The Minisymposium aims at examining the most recent advances in the modeling and simulation of concrete and concrete structures. The areas of interest include but are not limited to:

* Self-healing and self-sensing concrete
* Advanced modeling and simulation of cementitious composites
* Sustainable concrete and alternative cementitious binders
* Multiscale modeling of concrete and concrete structures
* Numerical modeling of crack propagation
* 3D printed concrete
* High-performance fiber-reinforced cementitious composites
* High performance concrete
* Reinforcement corrosion
* Damage and failure modeling and analysis of concrete and structures
* Dynamic analysis of concrete structures
* Probabilistic modeling of concrete structures
* Fracture and durability of concrete structures
* Finite element simulation of concrete and concrete structures