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COMPUTATIONAL METHODS IN MULTI-SCALE, MULTI-UNCERTAINTY AND MULTI-PHYSICS PROBLEMS

15-17 July 2019, Porto, Portugal

How to register and submit contributions:

Authors are invited to submit individual contributions on any of the conference topics. Submissions and conference registration should be submitted electronically via the **conference website:**

<https://cm4p.org>

15-17 JULY | 2019 | PORTO | PORTUGAL

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About

The development of multi-scale, multi-uncertainty and multi-physics models has received significant attention over the last two decades. **New mathematical formulations and numerical solution strategies allied to the increase in computational power/cost ratio have fostered a dramatic growth in this rapidly expanding field.** Research activity in this area has been devoted to the development and combination of different analytic tools (homogenization, asymptotic analysis) and computational methods (parallel computing, stochastic analysis, code coupling) for application in fields as diverse as metal processing, composite material, oil & gas development, fuel cell technology and biomedical tissue engineering, etc. Such developments have played a central role in the understanding of the **interaction among multi-physics and multi-uncertainty** phenomena taking place at multiple scales in space and time.

CM&P welcomes the following (not exhaustive) **research topics:**

- Computational homogenization and multi-scale modelling
- Stochastic modelling, probabilistic engineering, reliability and risk assessment
- Computer simulation of multi-physics processes/systems
- Computational coupling strategies
- High-performance computing related to the 3M (multi-scale, multi-physics and multi-uncertainty) challenges
- Relevant scientific and industrial applications
- Other related topics

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