Mechanics & Industry

An International Journal on Mechanical Sciences and Engineering Applications

Call for Papers

Themed Issue on

'High fidelity models for control and optimization'

Edited by:

- Prof. Nicolas Moës, Centrale Nantes, France
- Dr. Emmanuel Guilmineau, Centrale Nantes, France

Background

This special issue is the second part of the contributions of the French Congress of Mechanics (CFM 2022).

This special issue focuses on High fidelity models for control and optimization.

High fidelity models are necessary in all fields of the mechanics, for example to control a flow to avoid vibration, to optimize a material to improve the shape memory alloys.

Turbulence, which is one the most complex phenomena in fluid mechanics, is very present in the industrial configurations. This phenomenon can be triggered by a hydrodynamic instability of the flow. It is important to know how to control this instability which can cause vibrations of the structure. But the vibration of the structure can be induced by fast solicitations such as shocks, impacts, explosions …

In fluid mechanics, the fluid can be Newtonian but also complex such as biological fluid, granular medium … Several phases of the flow are also investigated.

For all these studies, the length scales can be very different and represented small length scales, typically of the order of a millimeter or a nanometer.

The coupling with thermics, encountered in fluid mechanics and also in solid mechanics, influences the understanding of physical phenomena.

Aims and Scope of the Themed Issue

This special issue aims to bring together the most significant contributions of the last CFM2022.

The general objective is to cover several scientific disciplines ranging from theory to applications. We will consider in this special issue especially:
- Contributions in numerical modelling and as well as in experimentation,

- Progress concerning turbulence, hydrodynamic instabilities, two-phase flows, fluid-structure interactions,
- Development related to energetic and thermomechanical processes,

You contribution has been selected for a potential article in the journal Mechanics & Industry.

You are then cordially invited to submit your article to the special issue entitled **'High fidelity models for control and optimization'**. It will be subject to an evaluation process in the journal.

Submissions

All relevant papers will be carefully considered, peer-reviewed by a distinguished team of international experts. The instructions for authors are detailed at: https://www.mechanics-industry.org/author-information/instructions-for-authors

Authors are invited to submit, as soon as their manuscript is ready, online at: https://articlestatus.edpsciences.org/is/mi/home.php
and choose, during the submission, the special issue: **'High fidelity models for control and optimization'.**

Submission deadline – February 28th, 2023

Article Processing Charges

Charges for this issue

To favour a broad and easy access to all published scientific information, Mechanics & Industry has flipped in full Open Access since January 2021. The Article Processing Charge for 2022 is 1100 €.
Please note that:

1. *Corresponding authors from French institutions having signed the National Open Access agreement in France, can publish in Open Access without any fee.*
2. *For authors who cannot benefit from the above agreement, but were invited by the editor in relationship to the 2022 CFM conference, the APC*

will be taken in charge by the French Association of Mechanics (AFM). For papers belonging to this case, the authors are kindly invited to acknowledge AFM in a section 'Funding' at the end of the paper (before the References).

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