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Special Issue on "Fluid Structure Interaction"

Editor: Prof. Carlos Guedes Soares

Fluid structure interaction is a central topic in the various application problems in the marine field, insofar as it covers all platforms and vehicles operating at sea. It includes classical topics such as ship resistance and propulsion, manoeuvring and control, seakeeping and ship vibrations, in which the hydrodynamic forces are generated in association with the motion of the structure.

While in these cases the structures are modelled as rigid and the hydrodynamics forces can be calculated with references to the initial geometry of the structure, there are, however, more intense loading situations in which it is necessary to model simultaneously the loading and the structural response as the last one will influence the loading imposed on the structure. This is the case of hydroelastic responses, which can be associated with sloshing, slamming and springing or with the behaviour of very large structures and of flexible membranes and nets. This is the case also for structural responses to explosion and blast situations as well as with the fluid interaction in external mechanics of ship collisions.

While the classical fields of fluid structure interaction continue attracting attention, in particular, to deal with the various kinds of non-linear formulations that are required to model the behaviour of floaters under storm conditions, the intense loading situations often require solution algorithms that are very demanding computationally and are under continuous development.

This special issue includes both classes of fluid structure interaction problems aiming at bringing attention to both the classical type of formulations as well as the more recent ones based on computational fluid dynamics.

Topics of interest include (but not limited to)

- Ship resistance and added resistance in waves
- Ship manoeuvring in still water and in waves
- Seakeeping in storm seas or at high speed
- Sloshing, Slamming and springing
- Hydroelastic behaviour of large floating structures
- Hydroelastic behaviour of flexible membranes and nets
- Vortex induced vibrations (VIV)
- Wind loading of structures
- Explosion and blast loading of structures
- External dynamics of ship collisions
- Interaction of structures with ice

Schedule

It is aimed to have the articles submitted before the end of 2016 so as to have the special issue published in the first half of 2017.

Submission Guidelines

Submitted articles must not have been previously published or currently submitted for journal publication elsewhere. Paper submissions must conform to the layout and format guidelines of the journal.

Submissions must be sent via the journal submission website

https://mc03.manuscriptcentral.com/jmsa

However before submission it is advisable to contact the Editor to ensure that the paper will be processed as part of the special issue

Editor

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