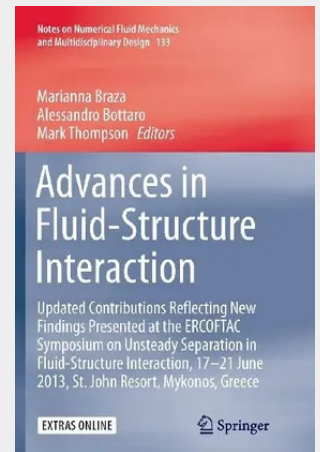


Advances in Fluid-Structure Interaction

This book addresses flow separation within the context of fluid-structure interaction phenomena. Here, new findings from two research communities focusing on fluids and structures are brought together, emphasizing the importance of a unified multidisciplinary approach. The book covers the theory, experimental findings, numerical simulations, and modeling in fluid dynamics and structural mechanics for both incompressible and compressible separated unsteady flows. There is a focus on the morphing of lifting structures in order to increase their aerodynamic and/or hydrodynamic performances, to control separation and to reduce noise, as well as to inspire the design of novel structures. The different chapters are based on contributions presented at the ERCOFTAC Symposium on Unsteady Separation in Fluid-Structure Interaction held in Mykonos, Greece, 17-21 June, 2013 and include extended discussions and new highlights. The book is intended for students, researchers and practitioners in the broad field of computational fluid dynamics and computational structural mechanics. It aims at supporting them while dealing with practical issues, such as developing control strategies for unsteady separation and applying smart materials and biomimetic approaches for design and control.

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