Unsteady separation in fluid–structure interaction—II

This Special Issue includes extended contributions selected from the oral presentations presented at the International ERCOFTAC Symposium ‘Unsteady Separation in Fluid–Structure Interaction’, held in Mykonos, Greece, 17–21 July 2013. This symposium was held under the aegis of ERCOFTAC (European Research Community on Flow, Turbulence and Combustion) and was also supported by the French research platform SMARTWING under the patronage of the Foundation STAE-RTRA (‘Sciences et Technologies pour l’Aéronautique et l’Espace—Réseau Thématique de Recherche Avancée’). The present special issue is the second of two volumes. The selected articles have been enriched with extended results obtained since the symposium. All papers have been reviewed in the same way as other articles submitted to this Journal.

The SMARTWING platform is coordinated by the Institut de Mécanique des Fluides de Toulouse (IMFT), ‘Unité Mixte de Recherche’ CNRS-INPT-UPS No. 5502.

In this context, IMFT organised the ERCOFTAC symposium (www.smartwing.org/ercoftac), with approximately 75 participants. The meeting was co-chaired by Dr. Marianna Braza (IMFT), Prof. Alessandro Bottaro (University of Genova, Italy) and Prof. Mark Thompson (Monash University, Australia). The topical sessions of this symposium associated with the present selection of articles were as follows:

- Theoretical aspects of fluid–structure interaction (FSI) involving separation.
- Instability and transition studies related to the onset of separation.
- Intelligent materials and electroactive morphing.
- Biomimetics for smart-wing design.
- Experimental techniques for the dynamics of separation.
- Turbulence modeling approaches involving FSI: URANS, LES and hybrid (RANS-LES).
- Theoretical/coupling strategies CFD-SM.
- Control of unsteady separation in FSI.

This meeting brought together renowned scientists in the above fields and contributed to advancing the physical comprehension, simulation and modeling methods in fluid–structure interaction involving unsteady separation. A general outcome was that the scientific communities working on experimental, theoretical and numerical approaches related to unsteady separation and its control in fluid–structure interaction learned much from one another, with this meeting bringing new research ideas to everyone and new concepts for smart designs.

Guest Editors
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