

1. Record Nr.	UNINA9910585936603321
Autore	Chen Wenli
Titolo	New Advances in Fluid Structure Interaction
Pubbl/distr/stampa	Basel, : MDPI - Multidisciplinary Digital Publishing Institute, 2022
Descrizione fisica	1 online resource (308 p.)
Soggetti	History of engineering & technology Technology: general issues
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	Fluid-structure interactions (FSIs) play a crucial role in the design, construction, service and maintenance of many engineering applications, e.g., aircraft, towers, pipes, offshore platforms and long-span bridges. The old Tacoma Narrows Bridge (1940) is probably one of the most infamous examples of serious accidents due to the action of FSIs. Aircraft wings and wind-turbine blades can be broken because of FSI-induced oscillations. To alleviate or eliminate these unfavorable effects, FSIs must be dealt with in ocean, coastal, offshore and marine engineering to design safe and sustainable engineering structures. In addition, the wind effects on plants and the resultant wind-induced motions are examples of FSIs in nature. To meet the objectives of progress and innovation in FSIs in various scenarios of engineering applications and control schemes, this book includes 15 research studies and collects the most recent and cutting-edge developments on these relevant issues. The topics cover different areas associated with FSIs, including wind loads, flow control, energy harvesting, buffeting and flutter, complex flow characteristics, train-bridge interactions and the application of neural networks in related fields. In summary, these complementary contributions in this publication provide a volume of recent knowledge in the growing field of FSIs.