1. Record Nr. UNINA9910404087503321

Autore	Passieux Jean-Charles
Titolo	Advances in Digital Image Correlation (DIC)
Pubbl/distr/stampa	MDPI - Multidisciplinary Digital Publishing Institute, 2020
ISBN	3-03928-515-7
Descrizione fisica	1 online resource (252 p.)
Soggetti	History of engineering and technology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	Digital image correlation (DIC) has become the most popular full field measurement technique in experimental mechanics. It is a versatile and inexpensive measurement method that provides a large amount of experimental data. Because DIC takes advantage of a huge variety of image modalities, the technique allows covering a wide range of space and time scales. Stereo extends the scope of DIC to non-planar cases, which are more representative of industrial use cases. With the development of tomography, digital volume correlation now provides access to volumetric data, enabling the study of the inner behavior of materials and structures.However, the use of DIC data to quantitatively validate models or accurately identify a set of constitutive parameters remains challenging. One of the reasons lies in the compromises between measurement resolution and spatial resolution. Second, the question of the boundary conditions is still open. Another reason is that the measured displacements are not directly comparable with usual simulations. Finally, the use of full field data leads to new computational challenges.