

1. Record Nr.	UNINA9910337659203321
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Titolo	Eigenvalue and Eigenvector Problems in Applied Mechanics // by Sorin Vlase, Marin Marin, Andreas Öchsner
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-00991-2
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (262 pages)
Collana	Advanced Structured Materials, , 1869-8433 ; ; 96
Disciplina	512.9436
Soggetti	Mechanics Mechanics, Applied Matrix theory Algebra Engineering mathematics Solid Mechanics Linear and Multilinear Algebras, Matrix Theory Engineering Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Quadratic Forms -- Rigid Body Dynamics -- Continuum Mechanics. Strain and Stress Tensor -- Modal Analysis -- Stability (Elastic and Dynamic) -- Dynamical Systems.
Sommario/riassunto	This book presents, in a uniform way, several problems in applied mechanics, which are analysed using the matrix theory and the properties of eigenvalues and eigenvectors. It reveals that various problems and studies in mechanical engineering produce certain patterns that can be treated in a similar way. Accordingly, the same mathematical apparatus allows us to study not only mathematical structures such as quadratic forms, but also mechanics problems such as multibody rigid mechanics, continuum mechanics, vibrations, elastic and dynamic stability, and dynamic systems. In addition, the book explores a wealth of engineering applications.