

1. Record Nr.	UNINA9910863172103321
Autore	Awrejcewicz J (Jan)
Titolo	Mathematical Modelling and Numerical Analysis of Size-Dependent Structural Members in Temperature Fields : Regular and Chaotic Dynamics of Micro/Nano Beams, and Cylindrical Panels // by Jan Awrejcewicz, Anton V. Krysko, Maxim V. Zhigalov, Vadim A. Krysko
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2021
ISBN	3-030-55993-9
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (XXI, 402 p. 146 illus., 139 illus. in color.)
Collana	Advanced Structured Materials, , 1869-8441 ; ; 142
Disciplina	621
Soggetti	Mechanical engineering Nanoscience Mechanical Engineering Nanophysics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Nano-Structural Members in Various Fields, Literature Review -- Size-Dependent Theories of Beams, Plates and Shells -- Lyapunov Exponents and Methods of Their Analysis -- Reliability of Chaotic Vibrations of Euler-Bernoulli Beams with Clearance -- Analysis of Simple Nonlinear Dynamical Systems -- Mathematical Models of Micro- and Nano-Cylindrical Panels in Temperature Field -- Mathematical Models of Functionally Graded Beams in Temperature Field -- Thermoelastic Vibrations of Timoshenko Microbeams (Modified Couple Stress Theory) -- Vibrations of Size-Dependent Beams Under Topologic Optimization and Temperature Field.
Sommario/riassunto	This book is devoted to researchers and teachers, as well as graduate students, undergraduates and bachelors in engineering mechanics, nano-mechanics, nanomaterials, nanostructures and applied mathematics. It presents a collection of the latest developments in the field of nonlinear (chaotic) dynamics of mass distributed-parameter nanomechanical structures, providing a rigorous and comprehensive study of modeling nonlinear phenomena. It is written in a unique pedagogical style particularly suitable for independent study and self-

education. In addition, the book achieves a good balance between Western and Eastern extensive studies of the mathematical problems of nonlinear vibrations of structural members.
