1. Record Nr. UNINA9910457967603321 Autore Simitses George J. <1932-> Titolo Fundamentals of structural stability [[electronic resource] /] / George J. Simitses, Dewey H. Hodges Amsterdam; ; Boston, : Elsevier/Butterworth-Heinemann, c2006 Pubbl/distr/stampa **ISBN** 1-281-22766-8 9786611227661 0-08-050705-0 Descrizione fisica 1 online resource (402 p.) Altri autori (Persone) HodgesDewey H Disciplina 624.1/71 Soggetti Structural stability **Buckling (Mechanics)** Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Includes bibliographical references and indexes. Nota di bibliografia Nota di contenuto copyright; Contents; front matter; Preface; body; 1 Introduction and Fundamentals; 1.1 Motivation; 1.2 Stability or Instability of Structures; 1.3 Continuous Deformable Elastic Bodies; 1.4 Brief Historical Sketch; 2 Mechanical Stability Models: 2.1 Model A: A One-Degree-of-Freedom Model; 2.2 Model B; A One-Degree-of-Freedom Model; 2.3 Model C; A Two-Degree-of-Freedom Model; 2.4 Model D; A Snapthrough Model; 2.5 Models of Imperfect Geometries; 2.6 Discussion of the Methods; 3 Elastic Buckling of Columns; 3.1 Special Functions; 3.2 Beam Theory; 3.3 Buckling of Columns 3.4 The Kinetic Approach3.5 Elastically Supported Columns; 3.6 Critical

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A.3 Derivatives of the Principle of Virtual Work

Sommario/riassunto

The ability of a structural assembly to carry loads and forces determines how stable it will be over time. Viewing structural assemblages as comprising columns, beams, arches, rings, and plates, this book will introduce the student to both a classical and advanced understanding of the mechanical behavior of such structural systems under load and how modeling the resulting strains can predict the overall future performance-the stability-of that structure. While covering traditional beam theory, the book is more focused on elastica theory in keeping with modern approaches. This text will be