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Lingua di pubblicazione	Inglese
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Nota di contenuto	Introduction -- Overview of Shapes and Stiffness -- Shapes with Coupled Deformations -- Nonlinear Elastic Shapes -- Buckling Shapes -- Studies of Post-buckled Shapes -- Index.
Sommario/riassunto	This book concerns the elastic stability of thin-walled structures — one of the most challenging problems facing structural engineers because of its high degree of nonlinearity — and introduces the innovative approach of using spectral analysis of the shapes and the stiffness to gain insights into the nonlinear deformations. The methodology greatly facilitates correlating the shape changes with the stiffness changes. Professor Doyle also develops specific computer procedures that complement finite element methods so that the ideas and methods are applicable to general structural problems. Basic validity of the procedures is established using key archetypal problems from buckling/post-buckling of columns, arches, curved plates, and cylindrical shells, all worked out in significant detail. The book is ideal for a wide variety of structural engineers, particularly those in aerospace and civil fields. Researchers in computational mechanics also find a rich source of new ideas for post-processing data from nonlinear analyses. Presents an innovative way of tackling nonlinear elastic stability problems with many new results and insights presented; Adopts a thoroughly modern, computationally based approach using

finite elements as its basis as well as for its validations; Reinforces reader understanding with a range of practical problems encompassing arbitrary frame and shell structures; Develops concepts systematically starting with basic deformations of structural members followed by analysis of structures with coupled deformations, progressing seemlessly to the nonlinear analysis of structures and buckling/post-buckling behaviors.