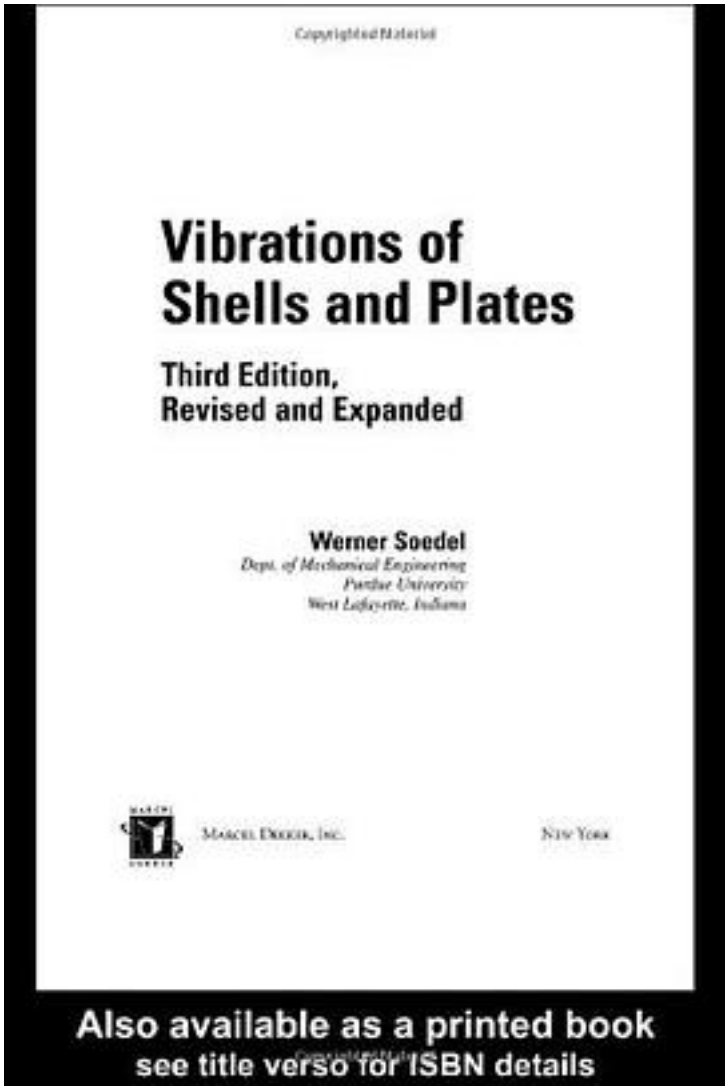
Vibrations of Shells and Plates



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著者:Soedel, Werner

出版者:Marcel Dekker Inc

出版时间:2004-8

装帧:HRD

isbn:9780824756291

With increasingly sophisticated structures involved in modern engineering, knowledge of the complex vibration behavior of plates, shells, curved membranes, rings, and other complex structures is essential for today's engineering students, since the behavior is fundamentally different than that of simple structures such as rods and beams. Now in its third edition, "Vibrations of Shells and Plates" continues to lay an analytical and computational foundation for the study of vibration in these structures."Vibrations of Shells and Plates, Third Edition" is updated with substantial new material reflecting advances made over the past decade since publication of the second edition. The author demonstrates how the vibration behavior of shells and plates differs from that of beams through theoretical development and examples. He also explains complicating effects on vibration such as the influence of rotation, shear, rotatory inertia, moment loading, residual stresses, and composite layers. New material includes the parabolic cylindrical shell, natural frequencies and modes, power series method, and explicit strain energy equations for many standard cases. Intended for graduate and post-graduate study in vibration, acoustics, noise control, and stress analysis, this textbook provides a strong foundation in vibration theory, offers analytical solutions that illustrate actual behavior of structures, and prepares students to perform finite element and finite difference analysis.

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Soedel, a native of Czechoslovakia of German nationality, earned master's and doctoral degrees from Purdue University. He earned his bachelor's degree from Staatliche Ingenieur Schule Frankfurt in Germany and also attended General Motors Institute for two years.

He had worked for Adam Opel AG and General Motors Corp. for six years before joining Purdue as a faculty member in 1967. Soedel is an internationally recognized scholar whose research focuses on the development and transfer of engineering science to compressor technology applied to refrigeration, air-conditioning and related fields. His work has resulted in more than 100 refereed journal publications and about 120 refereed conference proceedings and papers. He has been the North American editor and the Americas editor for the Journal of Sound and Vibration, the world's premier journal for research in sound and vibration.

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Historical Development of Vibration Analysis of Continuous Structural Elements
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