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| Nota di contenuto | Contents ; Preface ; Chapter 1 Vibrations of Thin Elastic Plates and Classical Point Models ; 1.1 Kirchhoff model for flexural waves ; 1.1.1 Fundamentals of elasticity ; 1.1.2 Flexural deformations of thin plates ; 1.1.3 Differential operator and boundary conditions ; 1.1.4 Flexural waves 1.2 Fluid loaded plates ; 1.3 Scattering problems and general properties of solutions ; 1.3.1 Problem formulation ; 1.3.2 Green's function of unperturbed problem ; 1.3.3 Integral representation ; 1.3.4 Optical theorem ; 1.3.5 Uniqueness of the solution ; 1.3.6 Flexural wave concentrated near a circular hole ; 1.4 Classical point models ; 1.4.1 Point models in two dimensions ; 1.4.2 Scattering by crack at oblique incidence ; 1.4.3 Point models in three dimensions ; 1.5 Scattering problems for plates with infinite crack ; 1.5.1 General properties of boundary value problems ; 1.5.2 Scattering problems in isolated plates ; 1.5.3 Scattering by pointwise joint ; |

Chapter 2 Operator Methods in Diffraction
; 2.1 Abstract operator theory ; 2.1.1 Hilbert
space ; 2.1.2 Operators
2.1.3 Adjoint symmetric and selfadjoint operators
2.1.4 Extension theory ; 2.2 Space L2 and differential
operators ; 2.2.1 Hilbert space L2
; 2.2.2 Generalized derivatives ; 2.2.3 Sobolev
spaces and embedding theorems ; 2.3
Problems of scattering ; 2.3.1 Harmonic operator
2.3.2 Bi-harmonic operator

Sommario/riassunto

This book presents the idea of zero-range potentials and shows the limitations of the point models used in structural mechanics. It also offers specific examples from the theory of generalized functions, regularization of super-singular integral equations and other specifics of the boundary value problems for partial differential operators of the fourth order.
<i>Contents:</i>Vibrations of Thin Elastic Plates and Classical Point ModelsOperator Methods in DiffractionGeneralized Point ModelsDiscussions and Recommendations for Future Research
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