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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.
Contents:

- Vibrations of Thin Elastic Plates and Classical Point Models
- Operator Methods in Diffraction
- Generalized Point Models
- Discussions and Recommendations for Future Research
