Boundary Element Method – Theory and Applications in Engineering

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Textbook

1. Textbook
J.T. Chen
Boundary Element Method - Theory and Applications in Engineering(in Chinese)
Liang-Yi Company Publ., Taipei, Taiwan, R.O.C, 1990, pp.329.
This book gives a compact and unified potential theory of boundary element methods in selected analysis, Laplace equation and crack problem. The hypersingular integral formulation is emphasized to treat the degenerate boundary value problems, e.g., Darcy flow around a cutoff wall and crack problem in elasticity. It consists of seven chapters. Chapter 0 gives a literature review and introduction. Chapter 1 is concerned with the associated mathematical preliminaries. Chapter 2 is devoted to the computational algorithm of discretization of integral equations. The applications of the dual integral formulation in Laplace equation and crack problem are presented in chapter 3 and 4, respectively. Chapter 5 contains the comparison of BEM and FEM and discusses the coupling use. Chapter 6 summarizes a short conclusion. The references contain three parts, thesis in Taiwan, papers and textbooks.