

邊界元素法期末考1998 by J. T. Chen

考試時間 — 9:00 to 12:00, June 12, 1998

考試方式 — Closed book

1. In the stage of developing BEPO2D program, how can you check the U , $\bar{T}$, $\bar{L}$ and M matrices ? (5%) Do the techniques fail for the problems with degenerate boundary ? (5%) Any other alternatives to determine the diagonal terms for M matrices free from using HPV concept ? (5%) How can you check the equilibrium condition by $U^{-1}\bar{T}$ or $\bar{L}^{-1}M$ for the problems with degenerate boundary ? (5%) Can the check method be applied to Helmholtz equation ? Why ? (5%)
2. Explain the following items. (30%)
 - (a). dual integral equations
 - (b). dual boundary element method
 - (c). Hadamard principal value
 - (d). Cauchy principal value
 - (e). kernel function
 - (f). Green's function
 - (g). degenerate boundary
 - (h). fundamental solution
 - (i). two-point function
 - (j). external problem
3. Please write down the differences for solving the eigenvalues and eigenmodes between discrete system and continuous system. (5%) Please write down the differences for solving the eigenvalues and eigenmodes using BEM and FEM. (5%)
4. What are the roles for hypersingularity in BEM ? (more than three roles) (15%)
5. What are the direct BEM and indirect BEM ? (5%) How many indirect BEMs you know ? (5%) How many direct BEMs you know ? (5%)