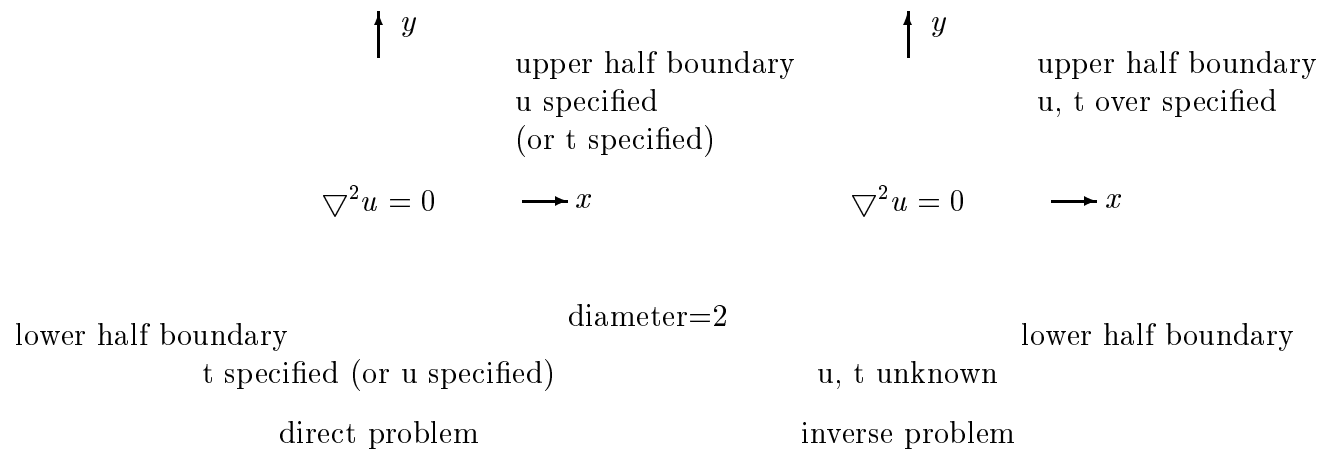
邊界元素法1999 第五次作業



1. Solve the potential problem

$$\nabla^2 u(\mathbf{x}) = 0, \mathbf{x} \in D$$

with Dirichelet boundary condition

$$u(\mathbf{x}) = \bar{u}, \ \mathbf{x} \ \textit{on the boundary}$$

2. By discretizing the circular boundary into N elements, determine the boundary normal flux.

3. Discuss the determinant of $[U]$ matrix.

4. By changing the radius from $\rho = 1$ to $\rho \neq 1$, what happens ?

5. By changing the fundamental solution $U(s, x) = ln(r/a)$, what happens ?

6. Contour plot for the potential.

References

[1] W. J. He, H. J. Ding and H. C. Hu, Degenerate scales and boundary element analysis of two-dimesional potential and elasticity problems, Computers and Structures, Vol.60, No.1, pp.155-158, 1996.

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