班級：_____學號：_____姓名：_____

國立台灣海洋大學河海工程研究所 BEM 第 9 次作業

In the paper of Chen et al. (2000), the program can give us

$$\begin{aligned} T_{ij}u_j &= U_{ij}t_j \\ M_{ij}u &= L_{ij}t_j \end{aligned} \quad \text{(Dual BEM)}$$

by using the direct BEM.

(a) Solve the exterior acoustics and plot the acoustic field for the problem in Fig. 1 using the program.

(b) Extend the direct BEM to the indirect BEM, we have

$$\begin{aligned} u_i &= \overline{U}_{ij}\tilde{f}_j \\ t_i &= \overline{L}_{ij}\tilde{f}_j \end{aligned} \quad \text{or} \quad \begin{aligned} u_i &= \overline{T}_{ij}\tilde{y}_j \\ t_i &= \overline{M}_{ij}\tilde{y}_j \end{aligned}$$

According to $\tilde{f}$ and $\tilde{y}$, plot the contour of acoustic field by using the in direct BEM.

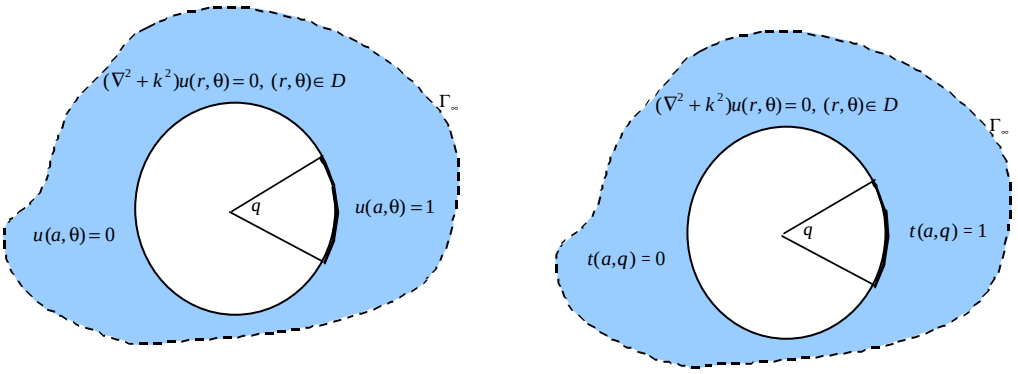

Fig. 1 Non-uniform radiation problems

Reference:

J. T. Chen, C. T. Chen, K. H. Chen and I. L. Chen,
"On fictitious frequencies using dual BEM for non-uniform radiation problems of a cylinder", *Mechanics Research Communications*, Vol. 27, No. 6, pp. 685-690, 2000.