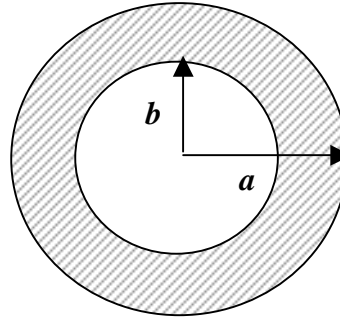


程式 32 Annular plate (Spurious eigenvalue)

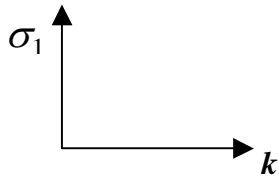
G. E.: $\nabla^4 u = \lambda^4 u$

B. C.:

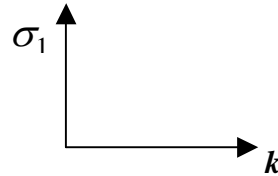
C-C	S-C	F-C
C-S	S-S	F-S
C-F	S-F	F-F



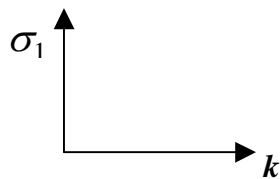
(1) u, θ 式



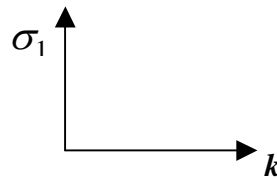
(2) m, v 式



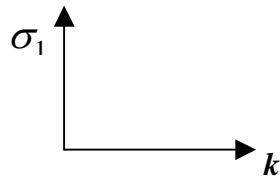
(3) SVD updating technique



(4) Burton & Miller's technique



(5) CHIEF technique



(6) Exact eigenequation

$$\det [T_I^{cc}]_{4 \times 4} = \begin{vmatrix} J_1(\lambda a) & J_1(\lambda b) & J_1'(\lambda a) & J_1'(\lambda b) \\ Y_1(\lambda a) & Y_1(\lambda b) & Y_1'(\lambda a) & Y_1'(\lambda b) \\ I_1(\lambda a) & K_1(\lambda b) & I_1'(\lambda a) & I_1'(\lambda b) \\ K_1(\lambda a) & I_1(\lambda b) & K_1'(\lambda a) & K_1'(\lambda b) \end{vmatrix} = 0$$

$$\det [S^{cc}]_{2 \times 2} = \begin{vmatrix} J_n(\lambda b) & I_n(\lambda b) \\ J_n'(\lambda b) & I_n'(\lambda b) \end{vmatrix} = 0$$

References

1. 林盛益，邊界元素法於板自由振動之數學分析與數值研究，海洋大學河海工程學系碩士論文，2003.