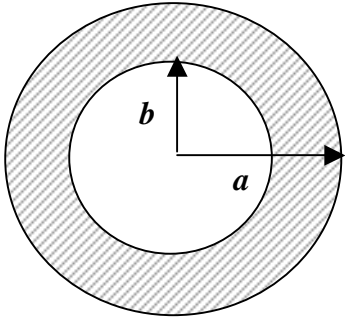


程式 31 Annular membrane (Spurious eigenvalue)

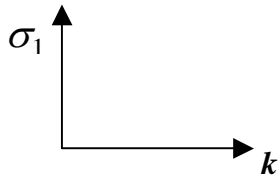
G. E.: $\nabla^2 u = -k^2 u$

B. C.:

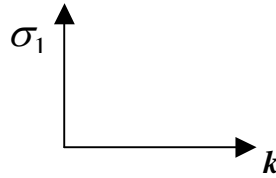
C-C	S-C	F-C
C-S	S-S	F-S
C-F	S-F	F-F



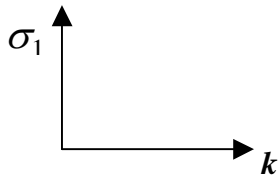
(1) UT 式



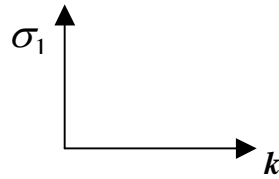
(2) LM 式



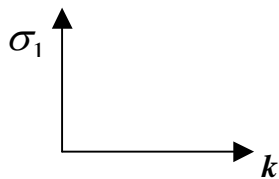
(3) SVD updating technique



(4) Burton & Miller's technique



(5) CHIEF technique



(6) Exact solution

True: $\det = \begin{vmatrix} J_n(kb) & J_n(ka) \\ Y_n(kb) & Y_n(ka) \end{vmatrix} = 0$

Spurious: $J_n(kb) = 0$

References

1. J. T. Chen, J. H. Lin, S. R. Kuo and C. W. Chyuan, 2001, Boundary element analysis for the Helmholtz eigenvalue problems with a multiply connected domain, Proceedings of the Royal Society Series A, Vol.457, pp.2521-2546.
2. J. T. Chen, L. W. Liu and H. -K. Hong, 2002, Spurious and true eigensolutions of Helmholtz BIEs and BEMs for a multiply connected problem, Proceedings of the Royal Society Series A, Vol.459, pp. 1-35.