

A SPECTRAL METHOD FOR FOURTH-ORDER BOUNDARY VALUE PROBLEMS

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Abstract. Boundary-value problems for fourth-order partial differential equations are studied in this paper; more precisely, vibrational phenomena of plates in an incompressible non-viscous fluid along the edge are mathematically analyzed. The spectral method via the variational formulation is used to prove existence, uniqueness and regularity theorems for the strong solution. We discuss also a discrete variational formulation for the considered problem.

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Key words. Spectral method, fourth-order problem, boundary condition.

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