

# Curve Veering Phenomenon in One-Dimensional Eigenvalue Problems

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## Abstract

The cause for the curve veering phenomenon is generally accepted to be the coupling of the eigenfunctions. The inadequacy of approximate methods has been shown to be one source of the coupling. Recently, it is found that there exist two kinds of coupling responsible for the occurrence: implicit and explicit couplings. The former one is generated by the incompleteness of the admissible function used in the approximate approach, while the latter is induced by the interaction between the main component and sub-component of structure. Curve veering can be observed in system with explicit coupling where exact solutions are available. In this paper, the coupling will be implemented through the structure itself (that is, explicitly) by an intermediate elastic support. All the problems in this paper are so-called two-point boundary value problems and will be solved exactly. It will be interesting to see how the eigenvalue loci behave.

Keyword : Curve Veering