
SANTIAGO NUMÉRICO I

Cuarto Encuentro de Análisis Numérico de Ecuaciones Diferenciales Parciales
Facultad de Matemáticas, Pontificia Universidad Católica de Chile, Enero 14 - 16, 2009

Computation of the vibration modes of a Reissner-Mindlin laminated plate

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Abstract

This work deals with the computation of the vibration modes of a laminated plate modeled by the Reissner-Mindlin equations [1], by using the DL3 elements for the bending terms and linear triangular finite elements for the in-plane displacements [2, 4]. We apply the general approximation theory for spectral problems and, under appropriate assumptions, we obtain optimal order error estimates, including a double order for the vibration frequencies. The estimates are independent of the thickness of the laminated plate, which leads to the conclusion that the method is locking-free [3]. Numerical tests are reported to assess the performance of the method.

References

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