GENERIC SIMPLICITY FOR THE EIGENVALUES OF A SUPPORTED PLATE EQUATION

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Boundary perturbations have been studied by several authors through different perspectives. Among others, we mention the work Henry in [1] where the author developed a general theory on perturbation of domains and proved several results on boundary perturbations for second order eliptic operators.

Using this theory as our main tool (in particular a general form of the Transversality Theorem), we show that the eigenvalues of the problem

$$\begin{cases} (\Delta^2 + \lambda)u(x) = 0 & x \in \Omega \\ u(x) = \Delta u(x) = 0 & x \in \partial\Omega \end{cases}$$

are simple in a residual set of $\mathcal{C}^4$ regular regions $\Omega \subset \mathbb{R}^n$ with $n \geq 2$.

REFERENCES

[1] D. B. Henry, *Perturbation of the Boundary in Boundary Value Problems of PDEs*, Unpublished notes, 1982 (to appear in Cambridge University Press).

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