

Lower and Upper bounds for the magnetic lowest Dirichlet-to-Neumann eigenvalue in the strong magnetic limit

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Inspired by some questions presented in a recent ArXiv preprint (version v1) by T. Chakradhar, K. Gittins, G. Habib and N. Peyerimhoff, we analyze their conjecture that the ground state energy of the magnetic Dirichlet-to-Neumann operator tends to $+\infty$ as the magnetic field tends to $+\infty$. More precisely, we explore refined conjectures for general domains in \mathbb{R}^2 or \mathbb{R}^3 based on the previous analysis in the case of the half-plane and the disk.

This part is a work in collaboration with Ayman Kachmar and François Nicoleau. In connexion with old works on the magnetic Schrödinger operator with J. Nourrigat, we will also discuss recent results by Zhongwei Shen.

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