



MAFIA - the seminar you can't refuse

Eigenvalue bounds for the magnetic Laplacian

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Abstract: We are going to derive spectral estimates for several classes of magnetic Laplacians. They include the magnetic Laplacian on three-dimensional regions with Dirichlet boundary conditions as well as the magnetic Laplacian defined in \mathbb{R}^3 with the local change of the magnetic field. We establish two-dimensional Berezin-Li-Yau and Lieb-Thirring-type bounds in the presence of constant magnetic fields and, using them, get three-dimensional estimates for the eigenvalue moments of the corresponding magnetic Laplacians. Also we derive separately the Lieb-Thirring bounds for the magnetic Laplacian defined on two dimensional circle with radially symmetric magnetic field.