MAFIA - the seminar you can't refuse

Magnetic Uniform Resolvent Estimates

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June 17, 2025
12:00–13:00
in T212

Fakulta jaderná a fyzikálně inženýrská ČVUT
Trojanova 13, 12000 Praha

Abstract:
A classical result due to Kenig, Ruiz and Sogge, states that the resolvent operator for the Euclidean Laplacian $(-\Delta - z)^{-1}$ is bounded from L^p to L^q for a certain range of indices p, q. The operator norm depends on the frequency z, as dictated by scaling, and it is actually independent of z for suitable values of p and q, hence the 'uniform' tag. In view of their applications to Spectral Theory, Harmonic Analysis and Non-linear PDEs, it is interesting to extend these estimates to more general operators beyond the Laplacian. In this joint work with Zhiqing Yin we consider a general electromagnetic Laplacian and, under suitable decay assumptions on the potentials, we recover the same range of indices as in the free case. As an application, we deduce a 'magnetic' restriction estimate of Tomas-Stein type. See `https://arxiv.org/abs/2504.11151` .