MAFIA - the seminar you can't refuse

Multipliers method for Spectral Theory

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Abstract: Originally arisen to understand characterizing properties connected with dispersive phenomena, in the last decades the multipliers method has been recognized as a useful tool in Spectral Theory, in particular in connections with proof of absence of point spectrum for both self-adjoint and non self-adjoint operators.

Starting from recovering very well known facts about the spectrum of the *boundary-free* Laplacian $H_0 = -\Delta$ in $L^2(\mathbb{R}^d)$, we will see the developments of the method reviewing some recent results concerning self-adjoint and non self-adjoint perturbations of this Hamiltonian in different settings. More precisely we will show how this technique allows to detect physically natural repulsive and smallness conditions on the potentials which guarantee the absence of eigenvalues.

In order to point out its versatility, we will show a further interesting application of this method when our configuration space is restricted to domains with boundary.

The seminar is based on a joint work with D. Krejčiřík.