



MAFIA - the seminar you can't refuse

Self-adjointness of $\operatorname{div} h \operatorname{grad}$ with a sign-changing h

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Abstract: We will discuss a definition and the spectral properties of the self-adjoint realizations of differential operators $\operatorname{div} h \operatorname{grad}$ in a bounded domain U , where the function h is equal to 1 on a part of U and to a constant $b < 0$ on the rest of U . In particular, the contribution of the geometric properties for the critical case $b = -1$ will be studied, and sufficient conditions for a non-empty essential spectrum will be given. Based on a joint paper with Claudio Cacciapuoti and Andrea Posilicano (University of Insubria) which will appear in *Journal d'Analyse Mathématique*.