



MAFIA - the seminar you can't refuse

Friedrichs Extension and Min–Max Principle for Operators with a Gap

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12:00–13:00

in T212

Fakulta jaderná a fyzikálně inženýrská ČVUT
Trojanova 13, 12000 Praha

Abstract: In many cases the physically relevant self-adjoint extension of a lower semibounded, symmetric operator is the Friedrichs extension. This extension preserves the lower bound and its eigenvalues below the essential spectrum can be computed in terms of a variational principle that only depends on the domain of the symmetric operator.

In my talk I will present a generalisation of the Friedrichs extension to the setting of a symmetric operator satisfying a gap condition. This extension remains gapped, and its eigenvalues above the gap are again given by a variational principle that involves only the domain of the symmetric operator.

I will discuss how the result can be applied to Dirac operators with Coulomb potential (where we recover the well-known distinguished self-adjoint extension and its variational principle), as well as to Dirac operators on manifolds with boundary.

This talk is based on joint work with Jan Philip Solovej and Sabiha Tokus.