CLOSED EXTENSIONS AND SPECTRA OF POSITIVE OPERATORS

Suppose $A : D_{\min} \subset H \to H$ is an unbounded closed symmetric Fredholm operator of negative index $-d$ on a Hilbert space H and let $A : D_{\max} \subset H \to H$ be its adjoint (in the talk A will actually be an elliptic partial differential operator). Then $D_{\min} \subset D_{\max}$ is closed in the graph norm, of codimension $2d$. The natural closed extensions of $A_{\min}$ of index 0 are in one-to-one correspondence with the manifold of d-dimensional subspaces of $D_{\max}/D_{\min}$, and the set of subspaces corresponding to selfadjoint extensions is a submanifold $\mathfrak{SA}$ of this Grassmannian. I'll analyze the dependence on the domain of the spectrum of selfadjoint extensions of A assuming that $A_{\min}$ is positive. Parts of the results to be presented reflect joint work with J. Gil and T. Krainer.