Characterization of extremal extensions

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joint work with K.-H. Förster

We give a representation of all nonnegative selfadjoint extensions $\tilde{A}$ of a nonnegative densely defined operator A in a Hilbert space $\mathcal{H}$. These representations are connected with the famous result of M. G. Kreĭn which implies a partial ordering $A_N \leq \tilde{A} \leq A_F$, where A_F and A_N are the Friedrichs and the Kreĭn-von Neumann extension of A, respectively. In particular, we will discuss extremal extensions of A which were introduced by Yu. Arlinskiĭ and E. Tsekanovskiĭ. Examples on regular Sturm-Liouville operators $-\frac{d}{dx}p\frac{d}{dx}$ are presented as well.