Variation of discrete spectra of selfadjoint operators in Krein spaces

L. Leben

We consider an additive perturbation of a bounded non-negative operator A in a Krein space with a non-negative operator C from a Schatten-von Neumann class of order p, such that $\ker C = \ker C^2$ and 0 is not a singular critical point. We show a qualitative result on the change of the discrete spectrum of A under the perturbation C. More precisely, given an open interval Δ with $0 \notin \overline{\Delta}$, there exist enumerations (α_n) and (β_n) of the discrete eigenvalues of A and of the perturbed operator $A+C$, respectively, such that

$$(\beta_n - \alpha_n) \in \ell^p.$$

The talk is based on a joint work with J. Behrndt and F. Philipp.