

Classes of operators defined by operator inequalities

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Let $\alpha(t) = \sum_{n=0}^{\infty} \alpha_n t^n$ be a function with real coefficients. Let T be a bounded linear operator on a Hilbert space H of class C_α , by which we mean that

$$\alpha [T^*, T] := \sum_{n=0}^{\infty} \alpha_n T^{*n} T^n \geq 0$$

We consider two cases:

- (i) The spectrum (T) is contained in the closed unit disc and the series for α converges in a disc $|t| < R$ for some $R > 1$;
- (ii) T is power bounded and belongs to the analytic Wiener algebra A_W (that is, the series $\sum |\alpha_n|$ converges).

In both cases, $\alpha [T^*, T]$ is well defined. In this talk some results of these operators will be stated.