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A FUNCTIONAL CALCULUS BASED ON FEYNMAN KAC FORMULA

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Abstract: It is proved that if

$$Hf = \int_0^\infty \lambda E(\lambda) f$$

is a spectral resolution of a Schrödinger operator $H = -\Delta + V$ on R^d with $V \in K^d_{loc.}$, $V(x) \geq 0$ and $V(x) \geq C|x|^\alpha$ for some $\alpha > 0$ and $|x| \geq C$, then there exists an N such that if $K \in C^N_c$, then the operator

$$\int_0^\infty K(\lambda) dE(\lambda)$$

is bounded on $L^P(R^d)$, $1 \leq p < \infty$.

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