

Spectral Function for some Product of Selfadjoint Operators

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Let \mathcal{H} be a Hilbert space with a scalar product (\cdot, \cdot) . Let $A : \mathcal{H} \rightarrow \mathcal{H}$ is a linear continuous operator, $A = A^*$ and $A \geq 0$, $G : \mathcal{H} \rightarrow \mathcal{H}$ is a linear continuous operator, $G = G^*$ and $0 \notin \sigma_p(G)$.

Consider the form $[\cdot, \cdot] := (G\cdot, \cdot)$, Hilbert space \mathcal{H} with a form $[\cdot, \cdot]$ is named G -space.

It is well-known a result of H.Langer about an existence of the spectral function of J -nonnegative operators. Our aim is to construct the spectral function for G -nonnegative operator AG . By the construction the spectral function we follow J.Bognar. We give an example of G -nonnegative operator which has no spectral function.

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