

Quadratic Operator Pencils and Selfadjoint Operators in Krein Space

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It is well-known that one can study spectral properties of a selfadjoint quadratic pencil via spectral properties of its linearization, which is a selfadjoint operator in a Krein space. We consider the, in some sense, "inverse" problem: to describe the selfadjoint operators in Krein spaces which are linearizations of some selfadjoint quadratic pencil. It is shown that each positive operator has this property.

This research is supported by the grant RFBR 05-01-00203-a.