MODEL REPRESENTATIONS OF QUADRATIC NON-SELFADJOINT OPERATOR PENCILS

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ABSTRACT: *For quadratic operator pencils of the type* $L(\lambda)=\lambda^2 I+\lambda B+A$, *where* $B=B^*$, $A\neq A^*$, *the problem of factorization,* $L(\lambda)=(\lambda I-Y)(\lambda I-X)$, *where* X, Y *are selfadxjoint operators, is studied. Model representations for the operator roots* X, Y *are obtained. They are expressed via the Hilbert and Sieltjes transforms in weighted spaces.*

KEYWORDS: *non-selfadjoint operator pencils, Hilbert transform, Stieltjes transform.*

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