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Abstracts of Short Communications and Posters

Section:

2. Algebra

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Solutions of Sylvester Equations AX-XB=C whose coefficients matrices A and B may have common eigenvalues.
We report the explicit solution of Sylvester (Matrix) Equation AX—XB=C whose coefficient matrices A and B may have common eigenvalues. If A and B have disjoint spectrum, the solution of the Sylvester Equation is explicitly described in polynomial fashion of block upper triangular matrix whose block diagonal entries are A and B, and its off-diagonal entry is C. If the asymtotic expansion of the solution of the perturbed Sylvester Equation (A+t)X—XB=C at t=0 has simple pole singularity we can explicitly and completely describe the solution space and the solvability condition.