

Some systems of Sylvester-type equations

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Motivated by the work of Baksalary and Kala [1], who studied matrix equations

$$AXB + CYD = E$$

and

$$AX - YB = C,$$

and some recent results on generalized Sylvester matrix equations, we investigate systems of one-sided and two-sided Sylvester-type equations for matrices and bounded linear operators between Hilbert spaces. We establish pure algebraic solvability conditions and give expression for the general solution in terms of generalized inverses.

References

- [1] J. K. Baksalary, R. Kala, The Matrix Equation $AXB + CYD = E$, *Linear Algebra Appl.* **30** (1980), 141–147.