

On some uses of Sylvester-type equations

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Abstract

The Sylvester, Lyapunov and other similar equations have been known to yield useful informations on many objects attached to a given matrix. We follow up by showing some recent/new results in this direction. Among others we will consider (i) bounds on the matrix exponential and stability properties, (ii) optimizing exponential decay and (iii) relative bounds for the eigenvectors of symmetric matrices/operators.