Polynomial approximations of the Lyapunov matrix of a class of time delay

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Abstract
A polynomial approximation of the Lyapunov matrix appearing in the complete type Lyapunov Krasovskii functionals associated to a class of retarded time delay systems is proposed. The results are concordant with the available semi-analytic solution. The comparison of the approximation error with that of the piecewise linear approximation previously introduced in the literature shows a significant improvement.

References