
On an alternative proof of Razumikhin matrix inequality

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The paper considers the way of deducing a sufficient condition of asymptotic stability for the linear time-delay system, which does not use Krasovskiy and Razumikhin classical theorems. The approach is based on evaluating the solutions of a scalar differential inequality for a positively defined quadratic function on the trajectories of the system. The condition of asymptotic stability found by this technique coincides with the previously known condition which is the consequence of Razumikhin theorem.

Keywords: linear time-delay system, conditions of asymptotic stability theorem, Razumikhin theorem.

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