

**ASYMPTOTICS OF THE OPTIMAL TIME IN A TIME-OPTIMAL CONTROL  
PROBLEM WITH A SMALL PARAMETER. I****A. R. Danilin, O. O. Kovrizhnykh**

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A time-optimal control problem for a singularly perturbed linear autonomous system is considered. The main difference of this case from systems with fast and slow variables studied earlier is that the system for fast variables is not asymptotically stable. Asymptotic expansions of the optimal time and optimal control with respect to the small parameter at derivatives in the equations of the system are constructed.

Keywords: optimal control, time-optimal control problem, asymptotic expansion, singularly perturbed problems, small parameter.

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