

Stability of an Autonomous System with Quadratic Right-Hand Side in the Critical Case

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Abstract: In this paper an autonomous system of differential equations with quadratic right-hand side is considered. In the case when the matrix of linear approximation has just one zero eigenvalue, the stability of trivial solution is investigated. System is written in the vectors-matrices form and under some additional conditions a Liapunov function of the quadratic form is constructed. A guaranteed zone of stability of trivial solution is given as well.

Keywords: *Zero eigenvalue; Lyapunov stability.*

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