MATHEMATICS

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ABOUT DYNAMIC FLOW BURSTS AND MINIMUM CUTS

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The article discusses the dynamic flows in oriented networks and bursts of flow in them. These examples show that the cause of the bursts is asynchronous of the network, i.e. the presence in it of varying lengths ways to the drain from the nearest minimum cut. Obtained necessary and sufficient condition for the occurrence of bursts of dynamic flow in the network.

Keywords: *oriented graph, oriented network, dynamic flow, burst of dynamic flow, asynchronous of the network.*

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STABILIZATION OF LINEAR TIME-INVARIANT CONTROLLABLE SYSTEMS OF THE SECOND ORDER BY DELAY OUTPUT FEEDBACK

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The problem of stabilization of two-dimensional linear time-invariant controllable systems by means of static time-invariant delayed output feedback is considered. It is shown the potential of delayed output feedback. Necessary and sufficient conditions for output feedback stabilizability of systems considered via delayed feedback are given. The theorems

proved in this paper show that such a delayed feedback approach allows to extend the possibilities available with static time-invariant output feedback for stabilizability of second-order linear systems.

Keywords: *linear time-invariant system, delayed output feedback, static time-invariant output feedback stabilization, asymptotic stability.*

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