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Routing control in IP-networks with the variable performance criterion. (English. Russian original) [Zbl 1140.93476](#)

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Summary: For routing control in backbone IP-networks, we propose to part the control time interval into two segments and to use different performance criteria on them. It is assumed that distribution of flows is realized at the first step by the Dijkstra algorithm which is included in OSPF and is used in Cisco routers. The minimax criterion is proposed at the second step; it is realized in the robust algorithm of data incoming flows distribution adjustment. The object of the adjustment algorithm is to prevent or lower the probability of networks congestion. Characteristics of the proposed algorithm are studied. Efficiency of the adjustment algorithm application for network controlling is demonstrated by the Monte Carlo method. Speed characteristics of the proposed algorithm are compared with some optimal algorithms.

MSC:

- [93E03](#) Stochastic systems in control theory (general)
- [90B18](#) Communication networks in operations research
- [93E20](#) Optimal stochastic control
- [93C95](#) Application models in control theory

Keywords:

Cisco routers; Dijkstra algorithm; minimax criterion; probability of network congestion

Full Text: [DOI](#)

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