

On the Inequality between Queue Length and Virtual Waiting Time in Open Queueing Networks under Conditions of Heavy Traffic

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Abstract : The paper is devoted to the analysis of queueing systems in the context of the network and communications theory. We investigate the inequality in an open queueing network and its applications to the theorems in heavy traffic conditions (fluid approximation, functional limit theorem, and law of the iterated logarithm) for a queue of customers in an open queueing network.

Keywords : fluid approximation, heavy traffic, models of information systems, open queueing network, queue length of customers, queueing theory

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020