Performance Evaluation of Distributed Computer-Communication Systems
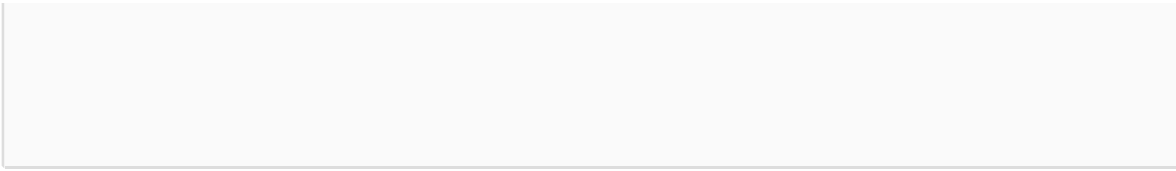
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Abstract

The computer-communication field is rich with extremely challenging problems for the queueing theorist. In this paper, we describe a number of computer-communication applications in wide-area networks, packet radio networks and local area networks. All of these involve sophisticated queueing theoretic models which have led to advanced applications of existing theory and in some cases, to new methods in queueing theory. A significant component in many of these applications is that of multi-access to a common resource (typically, a communication channel); we devote a significant portion of this paper to multi-access systems. In addition to identifying problems of interest to the queueing theorist. This paper summarizes the latest results for the mean response time of many

current computer-communication applications.

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