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An introduction to queueing networks. Transl. from the English by G. S. Ikramov and A. L. Tolmachev. Transl. ed. and with a preface by V. F. Matveev. (Vvedenie v teoriyu massovogo obsluzhivaniya.) (Russian) [Zbl 0854.60089](#)

Moskva: Mir. 336 p. (1993).

Publisher's description: "This book by an American specialist is written as a textbook for undergraduate and graduate students studying electronics, computer technology and operations research, and therefore the author begins with the fundamentals of probability theory, the theory of Markov chains and queueing theory, and ends with new and nontrivial material that is poorly represented in the literature in Russian: dynamical control on networks with queues and the use of large deviations for fast modeling of networks. Mathematicians can become acquainted with new problems put forth by the theory of communication networks. The book fulfills the need for textbooks on network theory and queueing. The book is intended for applied mathematicians, undergraduate and graduate students."

Contents: Chapter 1. A brief survey; Chapter 2. Markov chains; Chapter 3. Multiplicative networks; Chapter 4. Sojourn times and flows; Chapter 5. Numerical methods; Chapter 6. Nonmultiplicative networks; Chapter 7. Stationary queueing systems; Chapter 8. Dynamic control of queueing systems; Chapter 9. Multi-armed bandit problems; Chapter 10. Statistical results; Appendix A. Probability; Appendix B. Queueing systems; Bibliography.

Reviewer: (MR 95e:60098)

MSC:

- [60K25](#) Queueing theory (aspects of probability theory)
- [60-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to probability theory
- [90-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to operations research and mathematical programming
- [90B22](#) Queues and service in operations research

Cited in 1 Document

Keywords:

[multiplicative networks](#); [sojourn times and flows](#); [numerical methods](#); [stationary queueing systems](#); [multi-armed bandit problems](#); [dynamical control on networks with queues](#)