On the recent developments of approximate analysis of sojourn times in queueing networks

by

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Queueing network models are widely used for the design and control of computer systems, telecommunication networks, and complex manufacturing systems. To analyze various delay times in the original system, we need to consider corresponding sojourn times in the modelled queueing network. Exact stochastic analyses are hardly available because of the complex and dynamic nature of queueing network models. In this paper, we discuss several techniques which are recently developed to analyze approximately the sojourn times in queueing networks under the quite general setting. In particular, we discuss both the theoretical aspects and the practical efficiency of QN-GPH, QNET, and fluid approximations. Application examples are also discussed.