Qeios

Peer Review

Review of: "Perturbation Methods for Phase-Type Queueing Models"

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This paper considers an M/G/1 queue with finite capacity and phase type (PH) distributed services. The goal of the paper is to study the sensitivity of the stationary distribution of the number of customers in the queue on a given parameter, namely the vector composed of the probabilities of the starting state of the PH distribution. The paper heavily relies on numerical experiments. What is disturbing in this paper is that the author seems to ignore the huge amount of published papers on the M/G/1 queue. The statioanry probability has been known for a long time in the technical literature, see for instance the paper by Keilson [1]. The sensitivy on one parameter can be studied by using the Taylor expansion of the closed form expression for the stationary probability.

Proposition 1 and Corollary 1 are well known results; they do not need proofs.

Globally, the paper does not contribute so much to the queueing literature.

References

1. ^J. Keilson. (1966). The Ergodic Queue Length Distribution for Queueing Systems with Finite Capacity. doi:10.1111/j.2517-6161.1966.tb00632.x.

Declarations

Potential competing interests: No potential competing interests to declare.