

An important and impactful paper

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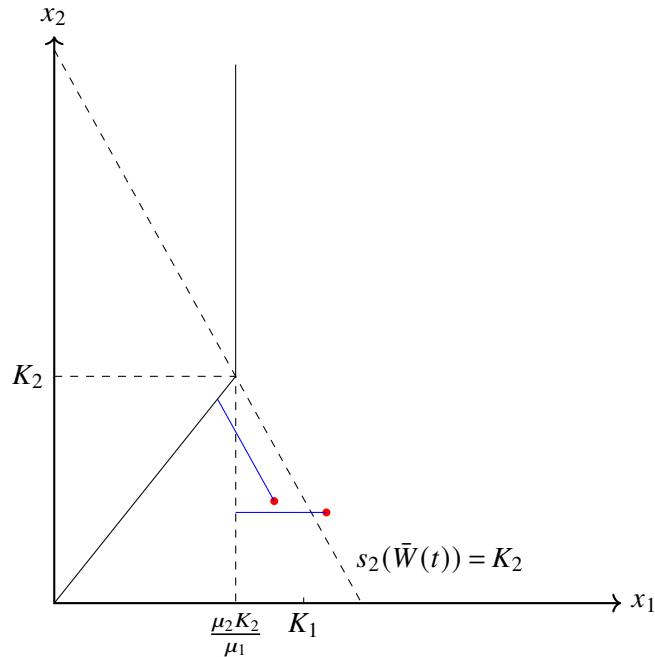
Abstract. Stochastic control in multi-class queueing networks has been extensively studied primarily focusing on minimizing operational costs (e.g., waiting, abandonment). However, in many real-world applications, the system operator must balance the trade-off between waiting costs and maximizing immediate rewards when assigning customers to service units.

Key words: Stochastic control, Queueing network, Uncertainty, Online learning, Optimization

1. Introduction

[Erlang \(1948\)](#), [Dantzig \(1955\)](#), [Dynkin \(1956\)](#), [Bellman \(1957\)](#), [Little \(1961\)](#), [Skorokhod \(1961\)](#), [McKean \(1965\)](#), [Iglehart \(1965\)](#)

2. Model



3. Conclusion

References

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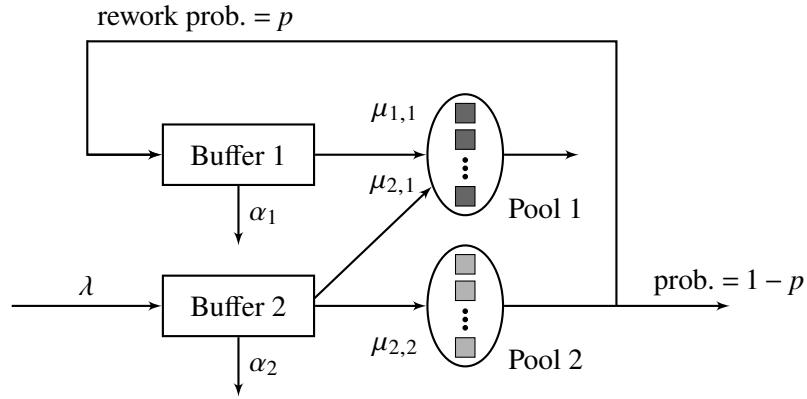


Figure 1 A schematic Model of Outsourcing with rework

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Proofs

EC.1. Proof of Results

EC.1.1. Proof of Lemma

LEMMA EC.1. As long as $t > 8 \frac{d \log 9 + \log(T/\alpha)}{p_*^2}$, the following lower bound

Proof of Lemma EC.1 □