

QUEUES WITH CUSTOMER INTERJECTIONS

Qi-Ming He, University of Waterloo, Canada, q7he@uwaterloo.ca
Alireza A. Chavoushi,

We study queueing systems with customer interjections. Customers are distinguished into normal customers and interjecting customers. All customers join a single queue waiting for service. A normal customer joins the queue at the end and an interjecting customer tries to cut in the queue. The waiting times of normal customers and interjecting customers are studied. Two parameters are introduced to describe the interjection behavior: the percentage of customers interjecting and the tolerance level of interjection by individual customers. The relationship between the two parameters and the mean and variance of waiting times is characterized analytically and numerically. Issues for further investigation will be discussed.