A batch arrival single server queue with generalized Coxian-2 Service and Optional Generalized Coxian-2 Vacations
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Abstract
We study the steady state behaviour of a batch arrival single server queue in which the first service with general service times $G_1$ is compulsory and the second service with general service times $G_2$ is optional. We term such a two phase service as generalized Coxian-2 service. Just after completion of a service the server may take a vacation of random length of time with general vacation times $V_1$. After completion of the first phase of vacation the server may or may not take the second optional vacation with general vacation times $V_2$. We term this two phase vacation as optional generalized Coxian-2 sever vacation. We obtain steady state probability generating functions for the queue size at a random epoch of time in explicit and closed forms. Some particular cases of interest including some known results have been derived.