

Transient solution of M/M/1 retrial queue using Homotopy perturbation method

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Several authors have discussed the transient analysis of retrial queues. One popular method involves taking Laplace transform of the associated generating functions. In this method, one has to invert the Laplace transforms (which usually have a complex structure) in order to obtain the system performance measures. Analytic expressions for the transient time system performance measures are therefore rarely obtained. We attempt to obtain semi-analytic expressions for the above measures using the Homotopy perturbation method. It turns out that this method itself has some challenges in implementation. However, the versatility of the method certainly opens up a plethora of solutions.

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