

Quasi-stationarity in queuing analysis

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The main interest is long-term behavior of stochastic models which finally are going to be terminated but stay stable over some reasonable time. In such a case for embedded Markov chain associated with model parameters we are able to obtain the limit distribution, conditioned on a fixed set of values ("taboo set") which corresponds to the stable behavior of the model. Relying on preliminary results obtained by Glynn and Thorisson and based on eigenvalues and eigenvectors method, we present quasi-stationary distributions for queue length in the unstable M/M/1 model.