THE $M^X/M/c$ QUEUE WITH CATASTROPHES AND STATE-DEPENDENT CONTROL AT IDLE TIME

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Abstract: In this paper, we consider an $M^X/M/c$ queue with catastrophes and state-dependent control at idle time. Properties of the queue which terminate at idle are firstly studied. Recurrence and equilibrium properties are studied for the case of resurrection and no catastrophes. All of these results and the first effective catastrophe occurrence time are then investigated for the case of resurrection and catastrophes. In particular, we obtain the Laplace transform of the transition probability for the absorbing $M^X/M/c$ queue.

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