This is a review text file submitted electronically to MR.

Reviewer: Konstantopoulos, Takis

Reviewer number: 68397

Address:
Department of Mathematics
Uppsala University
PO Box 480
SE-75106 Uppsala
SWEDEN
takis@math.uu.se,takiskonst@gmail.com

Author: Wu, Lin; Zhu, Chuan-xi; Wu, Yun-jiang

Short title: Strong approximations for a Kumar-Seidman network under a priority service discipline.

MR Number: 2720563

Primary classification: 60K25

Secondary classification(s): 60F17 60J70

Review text:

The paper considers a queueing network with 2 stations and 2 traffic streams. The first traffic stream enters station 1, moves to station 2, and then exits the network. The second traffic stream enters station 2, moves to station 1, and then exits the network. There is one server in each station which works in a non-idling, work-conserving fashion. In each station, the server gives priority to the customers who are about to exit the system. The stability of such a system was first considered by Rybko and Stolyar (1992). If the arrival and service processes satisfy (i) a functional law of iterated logarithm or (ii) a strong approximation by Brownian motions, then so do the departure processes, queue lengths and workloads.

Bibliography used in this review:

Rybko, A.N. and Stolyar, A.L. (1992). Ergodicity of stochastic processes that describe functioning of open queueing networks. *Problems Inform. Transmission* 28, 3-26 (in Russian).