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A Bibliography of Research on Heavy Traffic Limit Theorems for Queues

Toshikazu Kimura

This paper provides a classified list of research on heavy traffic limit theorems for queues. Heavy traffic limit theorems provide not only rigorous descriptions of unstable queues but also useful justifications of diffusion-process approximations of stable queues. Our main focus is on the former aspect of the heavy traffic limit theorems.

This paper provides a classified list of research on heavy traffic limit theorems for queues. This bibliography is supplementary in the sense that it does not include rather classical work in the previous review papers of Whitt[8] and Lemoine [6].

Heavy traffic limit theorems provide not only rigorous descriptions of unstable queues but also useful justifications of diffusion-process (or Brownian) approximations of stable queues. Because our main focus is on the former aspect of the heavy traffic limit theorems, research on the latter aspect, e.g., by Gordon F. Newell, Donald P. Gaver, John P. Lehoczky, J. Michael Harrison, Martin I. Reiman, Lawrence M. Wein and many others, are excluded from the list. A survey work on the diffusion-process approximations for queues is in progress and will be reported elsewhere.

Surveys:


**General Results:**


**Bulk Queues:**


[59] J. Dagsvik, Stability and heavy traffic results for the general bulk queue,


Priority Queues:


See also Dyakonova and Belyaev[62] and Reiman and Simon[99].

Queueing Networks:


See also Foschini[108, 110], Foschini and Salz[111] and Whitt[54]
Computer/Communication Systems:


See also Coffman and Reiman [1, 2] and Flores [3, 4].

Controlled Queues:


See also Martins and Kushner [94].
Storage Systems:


Associate Professor of Economics, Hokkaido University

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