

THREE NEW STATE SPACE COLLAPSE RESULTS FOR THE MULTICLASS G/G/1 QUEUE

R. Atar, Technion
A. Biswas Technion,
A. Lev-Ari, Technion,
M. Shifrin, Technion

This talk is on asymptotic optimality results, in diffusion and moderate deviation scales, for the multiclass G/G/1 queue with various combinations of the following elements: scheduling/admission control, finite buffers, reneging, holding/rejection/renegeing costs. In all cases the limiting dynamics is one-dimensional, and asymptotic optimality is achieved by switching from one priority discipline to another depending on the workload level. Related models we could not solve will also be mentioned.