Fluid Limits for partial stability of Markovian queueing networks

Bara Kim
Department of Mathematics,
Korea University,
Seoul, Republic of Korea
Email:bara@korea.ac.kr

Abstract

The partial stability of a queueing network means that a subnetwork consisting of buffers in the queueing network is stable. In this work we provide a general tool for the analysis of partial stability of queueing networks. We define fluid limits that suit with subnetworks of queueing networks, and then introduce notions of stability and instability for fluid limit models of the subnetworks. Stability and instability criteria for subnetworks are provided in terms of stability and instability of fluid limit models of the subnetworks.