

1044-60-55

Patrick P. Wang* (pwang@ua.edu), Department of Mathematics, University of Alabama, Box 870350, Tuscaloosa, AL 35487, and **Minqing Gong** (minqing@163.com), Guizhou University, Dept of Math, Guiyang Guizhou, China PR 550025. *Markovian Arrival Processes and Applications in Queueing Systems.*

In this talk, we will first introduce the Markovian arrival process (MAP) which is the generalization of Poisson processes, phase-type renewal processes. Extension to batch and multivariate MAP will be discussed. The second part of the talk applies the multivariate MAP to queuing systems arising from telecommunication. The steady-state queue length probability has a matrix-geometric solution. Proofs of existence and uniqueness of the solution will be presented, as well as numerical aspects of the solution. (Received August 08, 2008)