

## Confidence Intervals

Consider a server, that executes jobs individually, in order of arrival and without interruption. Jobs arrives and are served according to the following inter-arrival time and service time distribution:

- Arrivals: an hyper-exponential distribution with two stages, characterized by  $(\lambda_1 = 0.02, \lambda_2 = 0.2, p_1 = 0.1)$
- Service: an uniform distribution between  $a=5$  and  $b=10$

Generate samples for the corresponding distributions and use them to create the arrival and completion curves of the service. Compute the 95% confidence intervals of the system average response time (R), average number of jobs (N), utilization (U) and throughput (X). Consider  $N = 50000$  jobs for the response time, and with  $K = 200$  runs of  $M = 250$  jobs each, for the other indices.