

## Estimating the Queue Length Distribution of ATM multiplexer using Threshold Bootstrap

김 윤 배\*, 황 정 운\*\*

\* 성균관대학교 시스템경영공학부

\*\* INI 컨설팅

In this paper, we propose a new technique of estimating tail area of steady-state queue length distribution:  $\Pr(Q > q)$ , of ATM multiplexer.  $\Pr(Q > q)$  is a fundamental measure of network congestion. Assessing  $\Pr(Q > q)$  properly is crucial for design and control of ATM networks.

Data traffic pattern of high-speed networks is highly correlated and bursty. Estimating  $\Pr(Q > q)$  is very difficult because of correlation and burstiness. We estimate entropy(rate-function) using large deviation principles and threshold bootstrap. Simulation studies are conducted to compare the performance of an existing method and our new method.