

PROJECT / Traffic Modelling and Performance Evaluation of Multiservice Networks

SCALE II

Main Objective:

This project aims at proposing the adoption of traffic models based on real traffic traces to support the design and management of the future Internet. The project will initially extend the work initiated in the SCALE project to develop fitting procedures for MMPPs, through the proposal and implementation of procedures to fit Batch Markovian Arrival Processes and Markov Modulated Compound Poisson Processes. These processes are able to reproduce accurately the first-order statistics and the autocovariance structure for the time scales of interest, so as to describe appropriately the long-range dependence characteristics that are common in observed traffic. Other processes exhibiting these properties will also be explored, e.g., the autoregressive process with Markov regime. Overall, the model fitting activities will be constrained by the need to match the traffic characteristics that have more impact in network performance, within the time scales of interest. The impact of splitting the traffic in classes according to its statistical properties is also investigated by extracting models for each individual class from the aggregate traffic data and studying their interdependencies.

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