

SOME PROBLEMS IN TELETRAFFIC
WITH PARTICULAR EMPHASIS ON LIMITED
AVAILABILITY NETWORKS

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This thesis contains work on three teletraffic problems. The first is the study of a limited availability alternate routing network in which more than one stream of traffic is offered to a common link. I develop a model for the calculation of the individual overflow statistics which gives a set of equations suitable for numerical solution as well as analytic solutions for simple cases.

The second area is the application of reversible Markov population processes to teletraffic. I derive a condition that allows the calculation of equilibrium distributions and apply it to a practical example.

The last problem is that of finding an explicit formula for the number of circuits required in limited availability groups. I present two attempts at finding such a formula.

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