
MICHEL PAQUETTE, School of Computer Science, Carleton University
Communication in Networks with Positively Correlated Faults

As communication networks grow in size and complexity, they become increasingly vulnerable to component failures. To this effect, the fundamental questions of communication network reliability have been studied in the past under the assumption that components fail randomly and independently. However, it is widely accepted that faults appear with positive correlation in communication networks. In fact, empirical work has shown that this assumption is a more reasonable one than that of fault independence. To the best of our knowledge, no analytic work has been done, providing results on the feasibility and speed of communication in networks, under the assumption that components fail randomly, with positive correlation.

In this talk, we consider the problem of feasibility and time of communication in networks with dependent positively correlated faults. We propose what is, to the best of our knowledge, the first set of analytic results concerning this important aspect of network communication.

This is joint work with Evangelos Kranakis and Andrzej Pelc.