

Constructing Resilient Structures in Graphs: Rigid vs. Competitive Fault-Tolerance

David Peleg

Weizmann Institute of Science, Israel

Abstract. The setting considered in this talk is that of a structure S constructed over a given network G and intended to efficiently support some service on it (e.g., a distributed database or a query-answering oracle.) Such a structure is required to ensure certain desirable properties with respect to G . However, a failure event F might damage some of the network's vertices and edges, and cause S to malfunction. We are interested in ways of making S fault-tolerant, namely, reinforcing it so that following a failure event, its surviving part continues to satisfy the requirements. The talk will distinguish between two types of fault-tolerance, termed rigid and competitive fault tolerance, compare these two notions, and illustrate them on a number of examples.