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İSTANBUL DISCRETE MATHEMATICS MEETINGS

WHY SOME VERTICES/EDGES ARE MORE IMPORTANT THAN OTHERS

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Abstract

Problems of safety and reliability occur in many practical contexts and adequate formulations of such issues have opened the way to possible treatments by mathematical optimization procedures. It is in particular the case in situations where a complex system has to be protected against attacks and for this purpose one may have to identify the “most important” elements of the system. To be concrete, assume we have a finite system S (collection of components) which can be operated in different ways. Each operating mode s is characterized by the subsets of components it uses. In order to find the most important components of S we may want to identify a smallest possible subset T of components in S which is such that every operating mode s has at least d components in T . In this talk, I will present results concerning several cases where S is a (weighted) graph and each operating mode s is associated with a combinatorial structure like for instance a matching, or a stable set, or a vertex cover, etc..

Date : Wednesday, November 28, 2012

Time: 15:00

Place: IMBM Seminar Room, Boğaziçi University South Campus