CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, February 22
2:00 – 3:00 PM
Maria Sanford, Room 101

ALGORITHMS FOR THE IDENTIFICATION OF MAXIMAL FAULT FREE PATHS AND CYCLES IN FAULTY HYPERCUBES

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Abstract: The hypercube is a connected, undirected graph composed of edges and nodes, or vertices. Hypercube networks are favored in parallel processing because of their high fault tolerance and because several other graphs can be isometrically embedded within a hypercube. Since individual processors within a connected network may fail, there is a need to design fault tolerant systems. The ability to identify a fault free cycle within a faulty hypercube network makes it possible to run programs which were designed to be implemented on a connected ring of processors, even when some faulty processors exist within the hypercube network. While there has been a great deal of research on hypercube networks, there is very little which addresses the ability to find maximal Hamiltonian cycles and paths among the non-faulty nodes in a hypercube network. In this talk we shall present a collection of algorithms and computer programs which can be used to construct Hamiltonian paths and cycles in hypercube networks with faulty nodes.

For further information:
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