

CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, April 1
2:00 – 3:00 PM
Maria Sanford, Room 101

SOME THOUGHTS ON THE PARANOID WATCHMAN PROBLEM

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ABSTRACT

A team of watchmen is needed to search the vertices of a finite graph for the possible presence of an intruder. They move about the graph along its edges and are able to look into vertices or edges that are distance at most one from their respective positions at any given moment. If the intruder is seen, he is caught. The intruder, if he exists at all, is omniscient and can move from vertex to vertex at lightning speed along unwatched paths.

For finite graph G , we define $W(G)$, the watchman number of G , to be the minimum number of watchmen needed to ascertain that G is free of intruders.

In this talk we investigate the properties of $W(G)$ and obtain bounds for the watchman numbers of certain graphs including trees, products of paths and n -cubes.

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