

# Discrete Mathematics Seminar

Illinois State University

2:00–2:50 pm, April 13

Speaker: Joseph Wittrock, Illinois State University

## Antimagic Labeling of Subdivided Caterpillars

Let  $G$  be a connected graph and  $m$  be the number of edges in  $G$ . We say  $G$  is antimagic if there exists a bijection  $\tau : E(G) \rightarrow [1, m]$  such that the node sum of any two vertices is distinct, where the node sum of  $v \in V(G)$  under  $\tau$  is the sum of all labels on edges incident to  $v$ . In 1990, Hartsfield and Ringel came up with the idea of antimagic labeling, and conjectured that all connected graphs other than  $K_2$  have an antimagic labeling. Research has proved this for certain types of graphs, such as regular graphs, spiders, and caterpillars. We prove that every subdivided caterpillar with an even number of legs is antimagic, where a subdivided caterpillar is a subdivision of a caterpillar  $T$  such that the edges not on the central path are subdivided the same number of times.

