



## Special Colloquium



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### **A variation of zero forcing: leaky positive semidefinite forcing**

**Abstract:** Zero forcing on a graph is an iterative graph coloring process where, starting with an initial set of blue vertices, we try to force other non-blue vertices blue according to a color change rule. The zero forcing number of a graph was first defined in 2008 by a AIM (American Institute of Mathematics) working group as a method of bounding the maximum nullity of a graph. Motivated by monitoring an electrical network, leaks are introduced into the graph hindering the ability of vertices to force. Though we lose the connection with the maximum nullity of a graph, leaks in a graph present interesting new avenues of research pertaining to the area of zero forcing. In this talk, stemming from collaborative works with students, we will introduce and explore a new variation of leaky zero forcing, leaky positive semidefinite zero forcing, and we will investigate the leaky forcing number for various graphs.

**Keywords:** Zero forcing, leaky forcing.

**Tuesday, Feb. 13, 12:05 – 12:50 pm in 1-309**