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Raluca Michelle Gera* (rgera@nps.edu), Dept. of Applied Mathematics, Naval Postgraduate School, Monterey, CA 93933, and **Jean Blair** and **Horton Steve**. *Dynamic Domination in Graphs*.

In this presentation we introduce and examine the topic of dynamic domination in graphs. A dynamic dominating set is a dominating set $S \subseteq V(G)$ such that for every $v \in S$, either

- $S - \{v\}$ is a dominating set, or
- there exists a vertex $u \in (V(G) - S) \cap N(v)$ such that $(S - \{v\}) \cup \{u\}$ is a dominating set.

We present computational complexity results and bounds on the size of dynamic dominating sets in arbitrary graphs. We also give a polynomial time algorithm to find minimum dynamic dominating sets for trees. (Received July 06, 2007)