

1154-05-1113 **Mary K Flagg** (flaggm@stthom.edu), 3800 Montrose, Houston, TX 77006, and **Phylicia Tran*** (tranpk@stthom.edu). *Power Domination in ciclo and estrella graphs*. Preliminary report.

The PMU placement problem in electrical engineering is the challenge of determining the optimal location of PMUs (phasor measurement units) in an electric power network to monitor the current and voltage in the network. Power domination is a coloring game on a simple graph which models the PMU placement problem. A power dominating set is a set of vertices (corresponding to the location of the PMUs) which color the whole graph according to the color change rule basic on the physics. The power domination number is the minimum cardinality of a power dominating set. To model the possibility that the data may not be available from one PMU, a 1-vertex fault-tolerant power dominating set is one in which the set minus any one vertex is also a power dominating set. The minimum cardinality of a 1-vertex fault-tolerant power dominating set is called the 1-vertex fault-tolerant power domination number. In this talk, we will present our results on the power domination and 1-vertex fault-tolerant power domination numbers of various ciclo and estrella graphs. (Received September 13, 2019)