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Ellen Veomett* (erv2@stmarys-ca.edu), **Marion Campisi**, **Tommy Ratliff** and **Andrea Padilla**. *Declination as a Metric to Detect Partisan Gerrymandering*.

Partisan gerrymandering is generally (and vaguely) understood to be the drawing of district lines in a way that unfairly benefits a particular political party. Gerrymandering has recently become a hot topic in many communities, including the mathematical community. One of the efforts that mathematicians have been involved with is the creation and analysis of metrics intended to detect the presence of partisan gerrymandering.

In this talk, we will analyze one particular such metric: the declination. This metric was introduced by mathematician Greg Warrington in January 2018, and relies on our intuition of what the results of “packing and cracking” (the tools used to gerrymander) tend to “look like.” We prove which pairs of vote share V and seat share S can be achieved in an election with declination 0 (indicating no gerrymandering), and how voter turnout affects what pairs (V, S) are possible. We also discuss implications of our analysis. (Received August 21, 2018)