

1035-91-716

William S Zwicker* (zwickerw@union.edu), Mathematics Department, Bailey Hall, Union College, Schenectady, NY 12309. *A voting rule based on the spatial median.* Preliminary report.

What do the following voting systems have in common?

- Approval voting
- Borda count
- Kemeny rule
- Grading systems that provide a letter grade for a course based on average test score

Each can be defined by assigning, to every possible ballot, a point in \mathfrak{R}^n , so that the mean location a of all ballots cast (counting multiplicities) determines the election outcome, according to which outcome point is closest to a . Equivalently, each is a *scoring rule*, in a suitably generalized sense.

What happens to such a rule when we replace the mean a with a multidimensional generalization mc of the median? With the Borda count, the “McBorda” rule appears to be less manipulable than the Borda count and significantly more decisive.

- Why does the spatial median yield so few tied outcomes? Recent graphical analysis yields some insight.
- Why should we care about decisiveness in a voting rule? Certain voting rules seem to achieve a relatively high resistance to manipulation only because they waffle by producing many ties.

(Received September 14, 2007)