

BI-CO MATHEMATICS COLLOQUIUM

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“Campaign Strategies and the Electoral College System”

Monday, April 27, 2009

Talk at 4:15 – KINSC H109
Tea at 4:00 – KINSC Math Lounge, H208

Abstract:

We investigate the strategic decisions facing candidates campaigning for office when the winner of the election is decided by a system like that of the US Electoral College rather than by a popular vote. What is the best way for a candidate to use her limited time and money? By investing time and money in a state, a candidate can increase her chances of winning that state—but at some cost to her chances of winning other states. What are the properties of a candidate’s optimal allocation of resources? Under what conditions does an equilibrium in the candidates’ choices of allocations exist? And when equilibria exist, what are their properties?

We model the interaction between two-candidates competing for office in an electoral college system as a two-person, zero-sum, non-cooperative game, and study how the nature of this game’s equilibria depend on a few key parameters and assumptions. We relate our results to previous formal analyses, discussions in the news media, and narrative accounts of how candidates for the US presidency have (or should have) allocated their campaign resources in past elections.

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