Combinatorics
Seminar

The best way to choose a winner

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Abstract: What could be easier than choosing the winner of an election? Just ask the voters to choose their favorite and pick the candidate with the most votes. It turns out that if there are more than two candidates, all sorts of paradoxes and undesirable outcomes can, and do, happen. For example, in 1998, Jesse Ventura was elected governor of Minnesota with 37% of the vote, even though more than half of the voters preferred either of the the other two candidates. So what is the best way to hold a multicandidate election? Arrow's Impossibility Theorem says that there is NO good way to choose a winner when there are more than two candidates in the sense that whatever method is chosen, there is always the possibility of an undesirable outcome. A natural question to ask for various election methods is how likely is a "bad" outcome? In this talk we will introduce Social Choice Theory and Arrow's Theorem and look at one desirable property of social choice methods – the Condorcet Winner Criterion (CWC). We will discuss a way to measure the likelihood of the CWC being violated and use this to compare different social choice methods.

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