

Rank-dominant Strategy Implementation in Voting

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Abstract

This paper considers a voting rule that each player sincerely votes when he/she cannot predict the strategies of any other players at all; e.g., he/she knows little about the preferences of the other players. We introduce the concept of rank-dominant strategies that a player may choose regardless of her/his risk attitude. We show that under the plurality voting rule with the equal probability random tie-breaking, sincere voting of a player is always her/his rank-dominant strategy. Moreover, if each player has a unique best alternative, then the voting result of rank-dominant strategies of all players is Pareto efficient. Finally, we also discuss scoring rules and show that sincere voting may not be any rank-dominant strategy even with the equal probability random tie-breaking.

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Keywords: Mechanism design; Voting; Plurality rule; Scoring rule; Tie-breaking rule; Rank-dominant strategy; Sincere voting

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