Potential Mechanisms in Single-Peaked Environments: Average Rules and Proportional Rules

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Abstract

While the social choice literature have focused on strategy-proofness, Saijo et al. (2007) have shown that strategy-proof mechanisms may not always work because of the existence of "bad" Nash equilibria. Subsequent papers such as Renault and Trannoy (2004, 2005) and Yamamura (2008) on average rules in one-dimensional voting and Bochet and Sakai (2007) on proportional rules in division problems, have focused on rules that implement strategy-proof rules in Nash equilibrium. By using results of Jensen (2007) for best-response potential games, we show that these Nash equilibria are stable in the following sense. Every best-response path converges to the set of Nash equilibria — a property similar to that of Cournot stability.

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