

# On Coalitional Stability and Single-peakedness

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## Abstract

We study a one-dimensional voting game in which voters choose a policy from a one-dimensional policy set according to any given voting mechanism. The purpose of this paper is to analyze coalitional behaviors in such voting situations. We employ the notion of strong Nash equilibrium and identify a necessary and sufficient condition for a voting mechanism to possess a strong Nash equilibrium by using the minimax theorem (von Neumann [3]). We moreover show that any strong Nash outcome, if exists, results in an outcome recommended by a particular augmented median voter rule.

JEL Classification: D78, D72, C70.

Key words: Single-peakedness, Augmented median voter rule, Strong Nash equilibrium, Minimax Theorem, Manipulation.

## References

- [1] Moulin, H. (1980) "On Strategy-Proofness and Single Peakedness," *Public Choice*, 35, 437-455.
- [2] Renault, R. and Trannoy, A. (2005) "Protecting Minorities through the Average Voting Rule," *Journal of Public Economic Theory*, 7, 169-199.
- [3] von Neumann, J. (1928) "Zur Theorie der Gesellschaftsspiele," *Mathematische Annalen*, 100, 295-320.
- [4] Yamamura, H. and Kawasaki, R. (2010) "Generalized Average Rules as Stable Nash Mechanisms to Implement Generalized Median Rules," mimeo.

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