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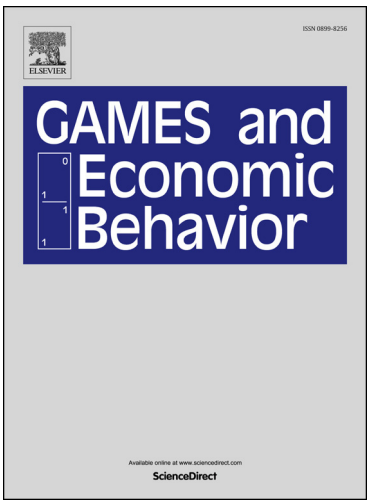

Strategy-proof location of public facilities

Jorge Alcalde–Unzu, Marc Vorsatz

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Strategy-proof location of public facilities*

Jorge Alcalde–Unzu† and Marc Vorsatz‡

July 24, 2018

Abstract

Consider the problem of locating a public facility taking into account the agents' preferences. To construct strategy-proof social choice rules, we propose a new preference domain that allows agents to have any single-peaked or any single-dipped preference on the location of the facility such that the peak/dip of the preference is in her own location. We characterize all strategy-proof rules in this general framework and study the conditions under which this family of strategy-proof rules includes non-dictatorial rules that have more than two alternatives in the range or that are Pareto efficient. Finally, we characterize for some focal cases all strategy-proof and Pareto efficient rules.

Keywords: social choice rule, strategy-proofness, Pareto efficiency, single-peaked preferences, single-dipped preferences.

JEL-Numbers: D70, D71, D79.

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