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# Strategy-proof social choice on multiple and multi-dimensional single-peaked domains

Alexander Reffgen\*

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## Abstract

We generalize the traditional concept of single-peaked preference domains in two ways. First, we introduce the concept of a *multiple single-peaked domain*, where the set of alternatives is equipped with several underlying orderings with respect to which a preference can be single-peaked, and we argue that these domains are appropriate to represent preferences over political parties. Second, we define a domain of *multi-dimensional single-peaked preferences* based on the condition of value-restricted preferences by Sen (1966). We provide complete characterizations of the strategy-proof social choice functions on both multiple and multi-dimensional single-peaked domains. For both domains, we also identify the subclasses consisting of all anonymous strategy-proof social choice functions.

**Keywords:** Social choice function, Strategy-proofness, Single-peakedness, Spatial voting.

**JEL Classification:** D71

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