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Presentation Title

Truth-Telling Dominating Strategy: Impossibilities of Shill-Proofness

Abstract

A strategy is truth-telling dominating (TTD) if it weakly (strictly, resp.) dominates truth-telling for all (some, resp.) strategy profiles of others. A strategy is iteratively TTD (i-TTD) if any iterate is TTD and payoff improving. We show that any mechanism with a non-truthful equilibrium is not i-TTD manipulable. We also show that any TTD shill-bidding strategy is i-TTD. The Vickrey-Clarke-Groves (VCG) mechanism is not shill-proof, but neither the existence nor the nonexistence of TTD strategy had previously been known. We show both that VCG is TTD manipulable when externalities exist, but not TTD manipulable in package auctions without externalities.

Keywords

Obvious strategy-proofness; Manipulability; VCG; Shill bidding; Package auction; Externalities; Referrer's dilemma

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