Ranking Asymmetric Auctions using the Dispersive Order*

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Abstract

The revenue ranking of asymmetric auctions with two heterogenous bidders is examined. The main theorem identifies a general environment in which the first-price auction is more profitable than the second-price auction. By using mechanism design techniques, the problem is simplified and several extensions are made possible. Roughly speaking, the first-price auction is more profitable when the strong bidder's distribution is flatter and more disperse than the weak bidder's distribution. These sufficient conditions turn out to have appealing geometric and economic interpretations. The theorem applies to certain environments with multi-dimensional types. It is also possible, for the first time, to extend the ranking to auctions with reserve prices and to auctions with more bidders. Implications for contests architecture and other auction formats are also pursued.

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