A Simple Ascending Auction for Assignment Problems

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Abstract

In this paper, we introduce a simple ascending auction that solves the problem of allocating a number of heterogeneous objects among several bidders each with a purely private unit demand. Our auction allows the auctioneer to set reserve prices above their true reservation values. The auction procedure requires minimal information from bidders and minimal computation from the auctioneer. Furthermore, our auction design has several desirable properties: (i) the auction stops in a finite time, (ii) sincere bidding at every stage of the auction is a Nash equilibrium, and (iii) for a given set of valuations, the auction revenue and ending prices depend only on starting prices. This is important since an auctioneer whose goal is different from maximizing allocative efficiency may still hope to be assured of sincere bidding and predictable ending prices.

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