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Optimal dynamic auctions for revenue management. (English) Zbl 1232.91333

Summary: We analyze a dynamic auction, in which a seller with $C$ units to sell faces a sequence of buyers separated into $T$ time periods. Each group of buyers has independent, private values for a single unit. Buyers compete directly against each other within a period, as in a traditional auction, and indirectly with buyers in other periods through the opportunity cost of capacity assessed by the seller. The number of buyers in each period, as well as the individual buyers’ valuations, are random. The model is a variation of the traditional single leg, multiperiod revenue management problem, in which consumers act strategically and bid for units of a fixed capacity over time.

MSC:
91B26 Auctions, bargaining, bidding and selling, and other market models
90C39 Dynamic programming

Keywords:
optimal auction; strategic behavior

Full Text: DOI Link