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Title: A Survey of Bidding Games on Graphs

Abstract: A graph game is a two-player zero-sum game in which the players move a token throughout a graph to produce an infinite path, which determines the winner or payoff of the game. In bidding games, both players have budgets, and in each turn, we hold an “auction” (bidding) to determine which player moves the token. In this survey, we consider several bidding mechanisms and study their effect on the properties of the game. Specifically, bidding games, and in particular bidding games of infinite duration, have an intriguing equivalence with random-turn games in which in each turn, the player who moves is chosen randomly. We show how minor changes in the bidding mechanism lead to unexpected differences in the equivalence with random-turn games. This is joint work with Guy Avni and others.