

Stability, Strategy-Proofness, and Cumulative Offer Mechanisms

Alexander WESTKAMP

(Universität Köln)

Abstract:

We consider the setting of many-to-one matching with contracts, where firms may demand multiple contracts but each worker desires at most one contract. We introduce three novel conditions - observable substitutability, observable size monotonicity, and non-manipulatability - and show that when these conditions are satisfied, the cumulative offer mechanism is the unique mechanism that is stable and strategy-proof (for workers). Moreover, when the choice function of some firm fails any of our three conditions, one can construct unit-demand choice functions for the other firms such that no stable and strategy-proof mechanism exists. In the final part of the paper, we characterize the class of choice functions for which the cumulative offer mechanism is guaranteed to yield a stable outcome.

Keywords: Matching with contracts, Stability, Strategy-proofness, Substitutability, Size monotonicity, Cumulative offer mechanism