

## **Dominant Strategy, Double Clock Auctions with Estimation-Based Tatonnement**

### **Abstract:**

We introduce a double clock auction mechanism for a homogeneous good market with multi-dimensional private information and multi-unit traders that never runs a deficit, is ex post individually rational and makes sincere bidding a dominant strategy equilibrium. In our double clock auction, the market maker estimates demand and supply using information from the bids of traders that have dropped out and follows an estimation-based tatonnement process to adjust the clock prices. The design is flexible and allows the market maker to target efficiency, profit maximization or an intermediate objective. Quantity constraints on traders may also be incorporated. Under mild regularity conditions convergence to the target goal, efficiency or the profit maximizing posted-price outcome, obtains as the market size grows.