数学与系统科学研究院

计算数学所学术报告

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报告题目：

A Unified Framework for Dynamic Pari–Mutuel Information Market Design: A Case of On–Line Optimization

邀请人： 袁亚湘研究员

报告时间： 2009 年 6 月 27 日(周六)

上午 10:00—11:00

报告地点： 科技综合楼三层 301

计算数学所报告厅

Abstract:

Recently, several pari-mutuel mechanisms have been introduced to organize prediction markets, such as the logarithmic scoring rule, the cost function formulation, and sequential convex pari-mutuel mechanism (SCPM).In this work, we develop a unified framework that bridges these seemingly unrelated models for centrally organizing contingent-claim markets. Our framework establishes necessary and sufficient conditions for designing mechanisms with many desirable properties such as proper scoring, truthful bidding (in a myopic sense), efficient computation, controllable risk-measure, and guarantees on the worst-case loss. As a result, we develop the very first proper, truthful, risk-controlled, loss-bounded, and polynomial-time scoring rule, which neither of the previous proposed mechanisms possesses simultaneously. Thus, in addition to providing a general framework that unifies and explains all the

existing mechanisms, our work would be an effective and instrumental tool in designing new market mechanisms. We also discuss applications of our framework to general open markets for dynamic resource pricing and allocation.

Joint work with Shipra Agrawal, Erick Delage, Mark Peters, Anthony So, and Zizhuo Wang.

欢迎大家参加！