On Learning through Gambling

David Heath (with Carl Diegert)

March 29, Computational Finance Seminar

This paper presents a new model in which a market adapts over time to produce "good" prices for traded instruments. Specifically, we examine in detail a "horse racing" market. In this market traders follow "mechanical" betting rules. Of course, some traders win and some lose. These wins and losses affect the futures bet sizes of the traders. We show that the resulting long-run average prices offered by the market are "correct". The proof requires a slight generalization of the strong law of large numbers.