Regulating algorithmic high frequency trading and collocation in the Indian securities market: A quantitative approach

The Indian securities market has seen an meteoric increase in algorithmic trading that involves the use of computerised algorithms for determining trading decisions. This usually takes the form of high frequency trading wherein orders are issued with an extremely high frequency. This has been further facilitated by location of servers of traders in physical proximity of the exchange (called colocation). There is concern among regulators worldwide about the impact of algorithmic trading.

Prof. Kulkarni is a consultant to the Technical Advisory Committee of the Securities and Exchange Board of India on devising regulatory strategies for high frequency trading. He designed a quantitative framework based on game theory and queuing theory for analysing and devising scheduling rules (randomisation, speed bumps, resting time, etc.) and information flows (tick-by-tick data feed, colocation access) to ensure a level playing field for all market participants and to control price volatility in the Indian securities market, in the face of algorithmic high frequency trading.

Prof. Ankur Kulkarni, Systems and Control Engineering, kulkarni.ankur@iitb.ac.in