

DREXEL ANALYSIS SEMINAR

November 22, 2013

3-3:50 PM, Korman 245

Speaker: Seva Joukhovitski (Susquehanna International Group)

Title: Option pricing and volatility at extreme strikes.

Abstract: An option contract is among the most simple derivative securities. Option buyer profits if the underlying asset price moves in a certain direction, but loses nothing if it moves in the opposite one. Option seller collects the premium for taking on the risk. Market participants may hold very different views regarding the value of a particular option, however the competition determines what is the “fair value”.

Classical model of Black, Scholes and Merton established a framework where the option price may be derived from the observed volatility of the underlying asset. Even though the model, in its original form, does not explain the fair values observed in the market, it has popularized the connection between the volatility and the option prices. Thus market participants commonly refer to the “volatility smile”, which is simply the Black–Scholes volatility implied by the market option prices.

This talk will start with an informal derivation of Black–Scholes–Merton pricing formula and proceed to the discussion of asymptotic behavior of implied volatility curves following the work of Jim Gatheral and Roger Lee.