

**Meeting:** 1002, Pittsburgh, Pennsylvania, SS 11A, Special Session on Mathematical Finance

1002-90-123            **Dmitry Kramkov** and **Mihai Sirbu\*** ([sirbu@math.columbia.edu](mailto:sirbu@math.columbia.edu)), 2990 Broadway, New York, NY 10027. *Risk-Tolerance Wealth Processes and Sensitivity Analysis of Utility Based Prices.*

In incomplete markets the prices of contingent claims can only be established taking into account the preferences of the agent. This leads to the well known definition of (marginal) utility based prices. Representing the price of a unit of contingent claim as a function of the number of claims  $q$ , we perform an asymptotic expansion around  $q = 0$ . The key element of the analysis turns out to be the existence of the risk-tolerance wealth process. This will be the natural numeraire for the asymptotic analysis. (Received September 10, 2004)