1135-60-281   **Aziz Issaka*** (`aziz.issaka@ndsu.edu`), Department of Mathematics, NDSU Dept # 2750, Minard Hall 406A, Fargo, ND 58108-6050, and **Indranil SenGupta**. *Analysis of some variance based instruments for Ornstein-Uhlenbeck type models.*

In this presentation a couple of variance dependent instruments in the financial market are studied. Firstly, a number of aspects of the variance swap in connection to the Barndorff-Nielsen and Shephard model are studied. A partial integro-differential equation that describes the dynamics of the arbitrage-free price of the variance swap is formulated. Under appropriate assumptions for the first four cumulants of the driving subordinator, a Vecer-type theorem is proved. Finally, a price-weighted index modulated by market variance is introduced and empirical data driven numerical examples are provided in support of the proposed price index. (Received August 18, 2017)