1159-60-25 **PETER K ASANTE*** (pkasante@miners.utep.edu), TX, and **Maria C Mariani**, **William Kubin** and **Osei K Tweneboah**. *Superposed Inverse-Gaussian (IG(a,b)) Ornstein-Uhlenbeck model applied to geophysics and financial data.*

Understanding stock behaviors benefits not only investors but also economic growths of countries. This speaks to the many existing and ongoing research on financial indices. On the other hand, earthquake occurrences though not directly linked to stock markets, may pose unprecedented risks including loss of human lives and even the fall of stock markets as experienced during and after the 2011 tohoku earthquake and tsunami in Japan. Research works in these areas have shown that in most cases data arising from financial indices and geophysics usually deviate from normal behavior. Thus, they are best modeled with non-Gaussian processes (Mariani et. al (2020)). In Mariani et. al (2015) and Habtemicael et. al (2014), the background driving process (BDLP) of the SDE was a gamma process. In this work we propose a superposed stochastic differential equation of Ornstein Uhlenbeck (OU) type driven by an Inverse Gaussian process (BDLP). We apply this model on high frequency financial indices and geophysical data. We seek to draw a comparison between the performance of the superposed $\Gamma(a, b)$ OU and the superposed IG(a, b) OU applied to both the financial indices and the geophysical data. (Received July 05, 2020)