

1159-60-6

Osei K Tweneboah* (oktweneboah@miners.utep.edu) and **Maria C Mariani**. *Modeling earthquake series dependencies by using coupled system of stochastic differential equations*. Preliminary report.

In this work, we model the influence of any natural or physical phenomena and the effect on each other, by using a coupled system of two stochastic differential equations. We will describe the correlation of earthquake series from four regions in the country Chile by using coupled system of Ornstein-Uhlenbeck stochastic differential equations. The objective is to model the dependency and effects of earthquake series occurring at the four different regions within the same geographical area. We will test our approach and present a numerical example by using real world earthquake series. (Received May 07, 2020)