1125-VP-1707   **Netra P Khanal*** (`nkhanal@ut.edu`), 401 W Kennedy Blvd, Tampa, FL 33606. *Differential Equation model for carbon dioxide emission.* Preliminary report.

Carbon dioxide (CO_2) is one of the major contributors in Global Warming. This study focuses on developing a system of differential equations using time series data of significant contributable variables of carbon dioxide in the atmosphere in the continental United States. We define the differential operator as data smoother and use the penalized least square fitting criteria to smooth the data. The proposed model gives an estimate of the rate of change of carbon dioxide in the atmosphere. The data set is obtained from the Carbon Dioxide Information Analysis Center (CDIAC), the primary climate-change data and information analysis center of the United States Department of Energy. (Received September 18, 2016)