1158-92-64   **Yang Kuang*** (`kuang@asu.edu`), Arizona State University, Tempe, AZ 85283. *Oscillatory dynamics of an intravenous glucose tolerance test model with delay interval.*

Delay differential equations have been frequently used to study complex dynamics observed in nature. More recently, they are used to understand intriguing physiological phenomena such as those expressed by glucose and insulin interaction. We propose a simple set of delay differential equations to model an intravenous glucose tolerance test. This model uses two parameters to simulate not only both discrete time delay and distributed time delay in the past interval, but also the time delay distributed in a past sub-interval. We show that this relatively simple model provides good fit to fluctuating patient data sets and reveals some intriguing dynamics. Most importantly, our model may remove the defect in the well known Minimal Model which often overestimates the glucose effectiveness index. (Received February 19, 2020)