1027-92-91   **Haiyan Wang*** (`wangh@asu.edu`), Department of Mathematical Sciences & Applied, Arizona State University, Phoenix, AZ 85069. *Enhanced modeling of the glucose-insulin system and its application in insulin therapies.* Preliminary report.

Several mathematical models have been proposed during the last decade to model the glucose-insulin system. These currently existing models assume that insulin degradation is proportional to insulin production. In this talk, we will introduce a new model for the glucose-insulin regulatory system by revisiting insulin degradation. We will provide mathematical analysis of the new model. Some applications in insulin therapies will be discussed. Numerical simulations show that the proposed model is more realistic. (Received February 19, 2007)