

1067-34-1654

Barnabas Bede* (bedeb@utpa.edu), 1201 West University, Edinburg, TX. *Existence and Characterization Theorems for Fuzzy Differential Equations.*

When modeling real-world phenomena, information available about a dynamical system is often uncertain or incomplete. The uncertainties are inherent and they are not always of statistical type, instead, they are epistemic, i.e., they may be due to the lack or imprecision of our knowledge about the data or even about the model. Such uncertainties are typically modeled by fuzzy data. It is a natural idea that the propagation of fuzzy uncertainties in a dynamical system can be modeled by Fuzzy Differential Equations. The talk will focus on fuzzy-valued functions and their derivatives and fuzzy differential equations. Local existence of two solutions and characterization theorems for fuzzy differential equations by ODEs will be discussed. (Received September 21, 2010)