

1125-92-490

Abba Gumell*, School of Mathematical and Stat. Sciences, Arizona State University, Tempe, AZ 85287. *Construction of Dynamically-consistent Discrete-time Models Arising in the Natural and Engineering Sciences.*

Continuous-time models associated with the mathematical modeling of phenomena arising in the natural and engineering sciences often require the preservation of certain intrinsic physical properties, such as the positivity, boundedness and asymptotic properties of the associated solutions. This talk will discuss some of the new results and challenges pertaining to the design of Mickens-type dynamically-consistent, nonstandard finite-different discrete models for approximating the solutions of some continuous-time models arising in the natural and engineering sciences. (Received September 03, 2016)