

Meeting: 1003, Atlanta, Georgia, SS 26A, AMS-SIAM Special Session on Dynamic Equations on Time Scales; Integer Sequences and Rational Maps, I

1003-34-1533 **Elizabeth R Duke*** (duke6@marshall.edu), Marshall University, Division of Mathematics and Applied Sciences, Huntington, WV 25755, and **Kelli J Hall, Bonita A Lawrence** (lawrence@marshall.edu) and **Ralph W Oberste-Vorth** (oberstevorth@marshall.edu).
Changing Time Scales: The Continuous Case as a Limit. Preliminary report.

Consider the logistic equations

$$x' = 4x\left(\frac{3}{4} - x\right)$$

and

$$\Delta x = 4x\left(\frac{3}{4} - x\right)$$

with the initial condition

$$x(0) = x_0.$$

The differential equation yields smooth, continuous solutions, whereas solutions of the difference are generically chaotic. Our goal is to understand the differences in behavior between these solutions as "bifurcations" over their underlying domains—the time scales \mathbb{R} and \mathbb{Z} , respectively. (Received October 05, 2004)