## 1158-35-85

Aghalaya S Vatsala\* (vatsala@louisiana.edu), Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504, and Yunxiang Bai. Sequential Versus Non sequential Caputo Dynamic Systems and Applications. Preliminary report.

Caputo differential equations is closer to integer dynamic equations, since the initial and boundary conditions for both of them are the same. However, in general the solution of Caputo fractional differential equation does not yield the solution of the integer dynamic system as a special case unless the order of the fractional derivative is such that 0 < q < 1. In order to take advantage of the global nature of the fractional derivative, study of sequential Caputo fractional dynamic systems is more advantageous. In this work, we demonstrate this both analytically as well as with applications. (Received February 22, 2020)