

1145-34-1763

Lingju Kong* (lingju-kong@utc.edu). *Modeling online social network dynamics using fractional order differential equations.*

The use of social media has been spreading at an accelerated rate in the last decade. While the dynamics of online social network have been studied using several models formulated via the integer order differential equations, these models are local, fail to capture the memory of the system, and have some other deficiencies. The aim of this study is to better understand the adoption and abandonment of a social network by utilizing a model of fractional order differential equations. Various model properties such as existence, uniqueness, and stability will be investigated. Moreover, numerical simulations are performed to confirm the theoretical results. (Received September 24, 2018)