For Favour of posting

The Hong Kong University of Science and Technology

Department of Mathematics

Seminar on Applied Mathematics

Some new progress of time fractional differential equations with Caputo derivatives

by

Prof. Lei LI

Duke University

Abstract

In this talk, I will introduce a generalized definition of Caputo derivatives based on a convolution group, and its applications to fractional ODEs, SDEs and PDEs. In particular, for time fractional ODEs, I will talk about the generalized comparison principles under very weak conditions, the monotonicity and blowup behavior for some autonomous fractional ODEs; I will also introduce a fractional SDE model with Caputo derivative and fractional Brownian motion involved to satisfy the fluctuation-dissipation theorem. Furthermore, for fractional PDEs, some compactness criteria will be introduced for the existence of weak solutions to time fractional PDEs. This talk is based on a series of work with Jian-Guo Liu, Jianfeng Lu et al.

Date: ***Wednesday, 20 December 2017***

Time: ***2:00p.m. – 3:00p.m.***

Venue: ***Room 5506, Academic Building (near Lifts 25 & 26), HKUST***

All are welcome!