2nd CSRC
Workshop on Numerical Methods
for Fractional-Derivative Problems:
Singularities and Fast Algorithms

13–14 April 2018

All lectures are in Conference Room 1 on 1st Floor (Ground Floor) CSRC building

Each 30-minute time slot allows $\boxed{\textit{25 minutes for the talk}}$ *and 5 minutes for questions and change of speakers*

<u>Chairpersons of sessions:</u> see list at the end of this Program

Friday 13 April	
08:15–09:00	*Registration* Enter CSRC at main entrance, then go to the right (past the elevators)
09:00–09:05	*Opening of Conference by Hai-Qing Lin, Director of CSRC*
09:05–10:05	*(Main Speaker)* **Jie Shen**, Log orthogonal functions and their applications to fractional PDEs
10:05–10:35	**Weihua Deng**, Anomalous diffusion with multiple internal states: modelling, simulation, and applications
10:35–11:00	*Tea/Coffee Break*
11:00–11:30	**Zhi-Zhong Sun**, Error analysis of a finite difference scheme on graded meshes for fractional diffusion-wave equations with an initial time singularity
11:30–12:00	**Xiaoping Xie**, High-order temporal accuracy algorithms for fractional wave problems
12:00–12:30	**Yuping Ying**, Transforming the time-fractional diffusion-wave equation into integer order
12:30	*Lunch*
13:45–13:55	*Group photo in foyer inside CSRC main entrance*
14:00–15:00	*(Main Speaker)* **George Karniadakis**, Spectral methods for singular solutions of the diffusion equation with general two-sided fractional derivative
15:00–15:30	**Fanhai Zeng**, A new class of semi-implicit methods with linear complexity for nonlinear fractional differential equations
15:30–16:00	*Tea/Coffee Break*
16:00–16:30	**Li-Lian Wang**, Efficient spectral methods for PDEs with fractional/nonlocal Laplacian and a new fractional framework for singularity analysis
16:30–17:00	**Xuan Zhao**, Fast solver for time-space fractional differential problems
17:00–17:30	**Jiang Yang**, Efficient and accurate Fourier approximations of nonlocal diffusion models
18:00	*Dinner*

Saturday 14 April	
09:00-10:00	*(Main Speaker)* **Natalia Kopteva**, Error analysis of the L1 method on graded and uniform meshes for a fractional-derivative problem in two and three dimensions
10:00–10:30	**Jiwei Zhang**, Sharp error estimate of the nonuniform L1 formula for reaction-subdiffusion equations
10:30–11:00	*Tea/Coffee Break*
11:00–11:30	**Hong-lin Liao**, A second-order scheme on nonuniform time meshes for a linear reaction-subdiffusion problem
11:30–12:00	**Jizu Huang**, Error estimate on tanh meshes for time fractional diffusion equation
12:00–12:30	**Changpin Li**, The finite difference method for Caputo-type parabolic equation with fractional Laplacian
12:30	*Lunch*
14:00–15:00	*(Main Speaker)* **Bangti Jin**, Error analysis of subdiffusion problems with a time-dependent diffusion coefficient
15:00–15:30	**Buyang Li**, Numerical analysis of nonlinear subdiffusion equations
15:30–16:00	*Tea/Coffee Break*
16:00–16:30	**Zhi Zhou**, Pointwise-in-time error estimates for an optimal control problem with subdiffusion constraint
16:30–17:00	**Peng Zhu**, Nonsmooth data error estimates for FEM approximations of the time fractional cable equation
17:00–17:30	**Xiangyun Meng**, The Green's function and a maximum principle for a Caputo two-point boundary value problem with a convection term
18:00	*Dinner*

Chairpersons of sessions	
Friday 09:00–10:30	Changpin Li
Friday 11:00–12:30	Weihua Deng
Friday 14:00–15:30	Jie Shen
Friday 16:00–17:30	Xiaoping Xie
Saturday 09:00–10:30	Bangti Jin
Saturday 11:00–12:30	Li-Lian Wang
Saturday 14:00–15:30	Jiwei Zhang
Saturday 16:00–17:30	Zhi-Zhong Sun