

# *7th CSRC Conference*

## Numerical Methods for Fractional-Derivative Problems

27–29 July 2023

*Each time slot:* 40 minutes for the talk + 5 minutes for questions and change of speakers

Chairpersons of sessions: Please check the list at the end of this Program to see if you are requested to act as Chairperson for any session. The conference organisers hope that the people on this list are willing to accept this responsibility. If you are unable to do so, please let the organisers know as soon as possible.

<b>Thursday 27 July</b>	
<b>08:30–08:35</b>	<i>Opening of Conference</i>
08:35–09:20	<b>Buyang Li</b> , High-order splitting finite element methods for the subdiffusion equation with limited smoothing property
09:20–10:05	<b>Minghua Chen</b> , High-order BDF convolution quadrature for subdiffusion models with a singular source term
10:05–10:30	<i>Tea/Coffee Break</i>
10:30–11:15	<b>Yubin Yan</b> , High-order schemes based on extrapolation for semilinear fractional differential equation
11:15–12:00	<b>Jiwei Zhang</b> , Do we need decay-preserving error estimate for solving parabolic equations with the initial singularity?
12:00–13:45	<i>Lunch (CSRC Canteen, in basement)</i>
<b>13:50–14:00</b>	<i>Group photo</i>
14:00–14:45	<b>Chengming Huang</b> , Fractional collocation method for third-kind Volterra integral equations with nonsmooth solutions
14:45–15:30	<b>Hui Liang</b> , On discontinuous and continuous approximations to second-kind Volterra integral equations
15:30–16:00	<i>Tea/Coffee Break</i>
16:00–16:45	<b>Natalia Kopteva</b> , ( <i>online talk</i> ) Recent results on pointwise-in-time a posteriori error control for time-fractional parabolic equations
16:45–17:30	<b>Hu Chen</b> , Pointwise-in-time error estimates of some numerical methods for multi-term subdiffusion equations
17:45	<i>Dinner (CSRC Canteen, in basement)</i>

**Friday 28 July**

08:30–09:15	<b>Wanrong Cao</b> , On spectral Petrov-Galerkin method for solving optimal control problem governed by fractional diffusion equations with fractional noise
09:15–10:00	<b>Zhi Zhou</b> , Discovering the subdiffusion model in an unknown medium
10:00–10:30	<i>Tea/Coffee Break</i>
10:30–11:15	<b>Fanhai Zeng</b> , A unified fast method for the fractional operators
11:15–12:00	<b>Zhiping Mao</b> , Efficient and accurate numerical methods using the accelerated spectral deferred correction for solving fractional differential equations
12:00–14:00	<i>Lunch (CSRC Canteen, in basement)</i>
14:00–14:45	<b>Dongfang Li</b> , Combined L1-spectral methods for time fractional Cahn-Hilliard equations
14:45–15:30	<b>Chaobao Huang</b> , Unconditional energy dissipation law and optimal error estimate of fast L1 schemes for a time-fractional Cahn-Hilliard problem
15:30–16:00	<i>Tea/Coffee Break</i>
16:00–16:45	<b>Zhaopeng Hao</b> , Efficient numerical methods for the integral fractional Laplacian
16:45–17:30	<b>Jinye Shen</b> , A grid-overlay finite difference method for the fractional Laplacian on arbitrary bounded domains
17:45	<i>Dinner (CSRC Canteen, in basement)</i>

**Saturday 29 July**

08:30–09:15	<b>Hong Wang</b> , A fractional PDE model for describing dynamic responses of viscoelastic beams
09:15–10:00	<b>Xiangcheng Zheng</b> , Analysis and numerical approximation of space-fractional boundary value problems in one and two space dimensions
10:00–10:30	<i>Tea/Coffee Break</i>
10:30–11:15	<b>Chengjian Zhang</b> , Accelerated schemes of compact difference methods for space-fractional sine-Gordon equations with distributed delay
11:15–12:00	<b>Xuan Zhao</b> , A unified design of energy stable schemes with variable steps for fractional gradient flows and nonlinear integro-differential equations
12:00–14:00	<i>Lunch (CSRC Canteen, in basement)</i>
14:00–14:45	<b>Min-Li Zeng</b> , On $\tau$ matrix-based approximate inverse preconditioning technique for solving spatial fractional diffusion equations
14:45–15:30	<b>Yong-Liang Zhao</b> , A bilateral preconditioning for an L2-type all-at-once system arising from time-space fractional PDEs
15:30–16:00	<i>Tea/Coffee Break</i>
16:00–16:45	<b>Changpin Li</b> , Numerical approximations to $\psi$ fractional derivative
16:45–17:30	<b>Xiangyun Meng</b> , Local analysis of an L1/finite element method for a time-fractional singularly perturbed reaction-diffusion problem
17:30–17:35	<i>Closing of Conference</i>
17:45	<i>Dinner (CSRC Canteen, in basement)</i>

<b>Chairpersons of sessions</b>	
Thursday 08:35–10:05	Yubin Yan
Thursday 10:30–12:00	Minghua Chen
Thursday 14:00–15:30	Xiangcheng Zheng
Thursday 16:00–17:30	Buyang Li
Friday 08:30–10:00	Hong Wang
Friday 10:30–12:00	Wanrong Cao
Friday 14:00–15:30	Chengming Huang
Friday 16:00–17:30	Changpin Li
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