5th CSRC Conference
Numerical Methods for Fractional-Derivative Problems

19–21 July 2021

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

Each 45-minute time slot allows $\boxed{\textit{40 minutes for the talk}}$ *and 5 minutes for questions and change of speakers*

<u>Chairpersons of sessions</u>: Please check the list at the end of this Program to see if you are requested to act as Chairperson for any session. The Workshop 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.

	Monday 19 July
08:00–08:30	*Registration* Enter CSRC at main entrance, then go to the right (past the elevators)
08:30–08:35	*Opening of Conference by* **Mingxing Luo, Director of CSRC**
08:35–09:20	**Chuanju Xu**, X-Spectral Methods for Some Differential Equations
09:20–10:05	**Li-Lian Wang** *online*, Analysis of Fractional Models Arisen from Electromagnetic Wave Propagations in Dispersive Media
10:05–10:30	*Tea/Coffee Break*
10:30–11:15	**Dongfang Li**, Some novel schemes to capture the initial dramatic evolutions of nonlinear subdiffusion equations
11:15–12:00	**Zhi Zhou**, Numerical analysis of backward subdiffsion problems: an application of error analysis in terms of data regularity
12:00	*Lunch (CSRC Canteen, in basement)*
13:45–13:55	*Group photo in foyer inside CSRC main entrance*
14:00–14:45	**Buyang Li**, Exponential convolution quadrature for nonlinear subdiffusion equations with nonsmooth initial data
14:45–15:30	**Sheng Chen**, A spectrally accurate approximation to subdiffusion equations using the log orthogonal functions
15:30–15:50	*Tea/Coffee Break*
15:50–16:35	**Natalia Kopteva** *online*, Pointwise-in-time a posteriori error control for time-fractional parabolic equations
16:35–17:20	**Hu Chen**, Discrete comparison principle for the time-fractional diffusion equation
17:20–18:05	**Hui Zhang**, Convergence analysis of the time-stepping numerical methods for time-fractional nonlinear subdiffusion equations
18:05	*Dinner (CSRC Canteen, in basement)*

Tuesday 20 July	
08:30–09:15	**Yufeng Nie**, Numerical Methods for Several Fractional PDEs
09:15–10:00	**Hui Liang** *online*, Convergence analysis of collocation solutions in continuous polynomial spaces for Volterra integral equations
10:00–10:25	*Tea/Coffee Break*
10:25–11:10	**Changpin Li**, Logarithmic asymptotics: analysis and computation
11:10–11:55	**Fanhai Zeng**, Fast convolution quadrature for fractional operators
11:55	*Lunch (CSRC Canteen, in basement)*
14:00–14:45	**Weihua Deng**, Numerical algorithm for the space-time fractional Fokker-Planck system with two internal states
14:45–15:30	**Xiangyun Meng**, Barrier function local and global analysis of an L1 finite element method for a multiterm time-fractional initial-boundary value problem
15:30–15:50	*Tea/Coffee Break*
15:50–16:35	**Huiyuan Li**, Error estimates of a spectral Galerkin method for the diffusion-reaction equation with integral fractional laplacian on a ball
16:35–17:20	**Chaobao Huang**, Optimal H^1 spatial convergence of a fully discrete finite element method for the time-fractional Allen-Cahn equation
17:20–18:05	**Beiping Duan**, Rational approximation schemes for computing operator functions $E_{\alpha,\beta}(-\mathcal{L}t^\gamma)v$ and $\mathcal{L}^{-\alpha}f$
18:05	*Dinner (CSRC Canteen, in basement)*

Wednesday 21 July	
08:30–09:15	**Bangti Jin** *online*, Discovering the subdiffusion model in an unknown medium
09:15–10:00	**Dongling Wang**, Long time behavior of numerical solutions to time fractional differential equations
10:00–10:25	*Tea/Coffee Break*
10:25–11:10	**Honglin Liao**, Asymptotically compatible energy laws of L1-type schemes for time-fractional Allen-Cahn equation
11:10–11:55	**Xuan Zhao**, Analysis of the variable-step L1 scheme for the 2D time-fractional Swift-Hohenberg equation
11:55	*Lunch (CSRC Canteen, in basement)*
14:00–14:45	**Minghua Chen**, Backward difference formulae: The energy technique for (sub)diffusion equation
14:45–15:30	**Hao Luo**, Numerical analysis of time fractional diffusion problems with low regularity data
15:30–15:50	*Tea/Coffee Break*
15:50–16:35	**Xiangcheng Zheng**, Optimal control of variable-order time-fractional PDEs
16:35–17:20	**Dongxia Li**, L1/LDG method for the generalized time-fractional Burgers equation
17:20–17:25	*Closing of Conference*
17:30	*Dinner (CSRC Canteen, in basement)*

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Monday 10:30–12:00	Honglin Liao
Monday 14:00–15:30	Weihua Deng
Monday 15:50–18:05	Buyang Li
Tuesday 08:30–10:00	Chuanju Xu
Tuesday 10:25–11:55	Dongfang Li
Tuesday 14:00–15:30	Xuan Zhao
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