

3rd CSRC Workshop

Numerical Methods for Fractional-Derivative Problems

26–27 April 2019

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

Each 30-minute time slot allows 25 minutes for the talk and 5 minutes for questions and change of speakers

Chairpersons of sessions: see list at the end of this Program

| Friday 26 April | |
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| 08:15–09:00 | <i>Registration</i> Enter CSRC at main entrance, then go to the right (past the elevators) |
| 09:00–09:05 | <i>Opening of Conference by Hai-Qing Lin, Director of CSRC</i> |
| 09:05–10:05 | <i>(Main Speaker) Buyang Li</i> , Convolution quadrature for fractional-derivative problems, artificial boundary conditions, and boundary integral equations |
| 10:05–10:35 | Zhi Zhou , Numerical analysis of nonlinear subdiffusion equations |
| 10:35–11:00 | <i>Tea/Coffee Break</i> |
| 11:00–11:30 | Hong Wang , On mathematical models by (variable-order) time-fractional diffusion equations |
| 11:30–12:00 | Xiangcheng Zheng , Wellposedness and regularity of variable order time fractional diffusion equations |
| 12:00–12:30 | Hui Liang , Collocation methods for general Riemann-Liouville two-point boundary value problems |
| 12:35 | <i>Lunch (CSRC Canteen, in basement)</i> |
| 13:45–13:55 | <i>Group photo in foyer inside CSRC main entrance</i> |
| 14:00–15:00 | <i>(Main Speaker) William McLean</i> , Discontinuous Galerkin time-stepping |
| 15:00–15:30 | Jiwei Zhang , Nonuniform time-stepping approaches for reaction-subdiffusion problems |
| 15:30–16:00 | <i>Tea/Coffee Break</i> |
| 16:00–16:30 | Hong-lin Liao , Sharp H^1 -norm error estimates of two time-stepping schemes for reaction-subdiffusion problems |
| 16:30–17:00 | Xiaoping Xie , Convergence analysis of a Petrov-Galerkin method for fractional wave problems with nonsmooth data |
| 17:00–17:30 | Yubin Yan , Detailed error analysis for a fractional Adams method with graded meshes |
| 17:30–18:00 | Beiping Duan , A rational approximation for the Mittag-Leffler function and its application to design a parallel algorithm for time fractional diffusion equation |
| 18:00 | <i>Dinner (CSRC Canteen, in basement)</i> |

Saturday 27 April

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| 09:00-10:00 | <i>(Main Speaker)</i> Masahiro Yamamoto , Fundamental studies and applications to inverse problems for time-fractional partial differential equations |
| 10:00-10:30 | Jijun Liu , On the source identifications for time-fractional order diffusion process |
| 10:30-11:00 | <i>Tea/Coffee Break</i> |
| 11:00-11:30 | Ting Wei , Recovering a space-dependent source term in a time-fractional diffusion wave equation |
| 11:30-12:00 | Yikan Liu , Identification of the temporal component in the source term of a (time-fractional) diffusion equation |
| 12:00-12:30 | Zhiyuan Li , Inversion for orders of fractional derivatives of diffusion equation |
| 12:35 | <i>Lunch (CSRC Canteen, in basement)</i> |
| 14:00-15:00 | <i>(Main Speaker)</i> Chuanju Xu , Müntz spectral methods for some problems having low regularity solutions |
| 15:00-15:30 | Li-Lian Wang , Towards effective spectral and <i>hp</i> methods for PDEs with integral fractional Laplacian |
| 15:30-16:00 | <i>Tea/Coffee Break</i> |
| 16:00-16:30 | Zhongdi Cen , A mesh equidistribution method for a time-fractional Black-Scholes equation |
| 16:30-16:50 | Hu Chen , An analysis of the Grünwald–Letnikov scheme for initial-value problems with weakly singular solutions |
| 16:50-17:10 | Chaobao Huang , Optimal spatial H^1 -norm analysis of a finite element method for a time-fractional diffusion equation |
| 17:10-17:30 | Xiangyun Meng , Green’s functions, positive solutions, and a Lyapunov inequality for a Caputo fractional-derivative boundary value problem |
| 18:00 | <i>Dinner (CSRC Canteen, in basement)</i> |

| Chairpersons of sessions | |
|---------------------------------|-------------------|
| Friday 09:00–10:30 | Yubin Yan |
| Friday 11:00–12:30 | William McLean |
| Friday 14:00–15:30 | Hong-lin Liao |
| Friday 16:00–18:00 | Hong Wang |
| Saturday 09:00–10:30 | Martin Stynes |
| Saturday 11:00–12:30 | Masahiro Yamamoto |
| Saturday 14:00–15:30 | Buyang Li |
| Saturday 16:00–17:30 | Chuanju Xu |