# Australia-China Joint Conference on Partial Differential Equations

*New Law Building Annex Seminar Room 340, The University of Sydney*

Sponsored by: Australian National University, The University of Sydney, University of Wollongong

| Monday | 11 December 2023 |
|---|---|
| 08:45–08:55 | Opening remarks |
| 09:00–09:45 | **Zhouping Xin** (The Chinese University of Hong Kong)<br>On the Prandtl's Boundary Layer Theory for Steady Sink-Type Flows |
| 09:50–10:00 | Group photo |
| 10:00–10:25 | Morning tea/coffee |
| 10:25–11:10 | **Serena Dipierro** (University of Western Australia)<br>The Allee effect: cooperation and competition among biological populations |
| 11:15–12:00 | **Ji Li** (Macquarie University)<br>Flag Hardy space theory—a complete answer to a question by E.M. Stein |
| 12:05–14:00 | Lunch break |
| 14:00–14:45 | **Enrico Valdinoci** (University of Western Australia)<br>Nonlocal capillarity theory |
| 14:50–15:15 | Afternoon tea/coffee |
| 15:15–16:00 | **Junbin Li** (Sun Yat-sen University)<br>On the instability of naked singularities in general relativity |
| 16:05–16:50 | **Qingtang Su** (Chinese Academy of Sciences)<br>The global well-posedness of 2d water waves with a pair of point vortices |

| Tuesday | 12 December 2023 |
|---|---|
| 09:00–09:45 | **Ben Goldys** (The University of Sydney)<br>Linear parabolic PDEs with very rough boundary conditions |
| 09:50–10:15 | Morning tea/coffee |
| 10:15–11:00 | **Xi-Nan Ma** (Chinese University of Science and Technology)<br>Liouville theorem for elliptic equations involving the sum of the function<br>and its gradient in $\mathbb{R}^n$ |
| 11:05–11:50 | **Chunqin Zhou** (Shanghai Jiao Tong University)<br>The recent developments of the super-Liouville equations |
| 11:55–14:00 | Lunch break |
| 14:00–14:45 | **Zhifei Zhang** (Peking University)<br>Nonlinear inviscid damping for the 2-D inhomogeneous Euler equations |
| 14:50–15:15 | Afternoon tea/coffee |
| 15:15–16:00 | **Brian Krummel** (University of Melbourne)<br>Analysis of singularities of area minimizing currents |
| 16:00–16:50 | Collaboration and Discussion |
| 18:30–21:00 | Conference Dinner at Thai Pothong, 294 King St, Newtown |

| Wednesday | 13 December 2023 |
|---|---|
| 09:00–09:45 | **Ben Andrews** (Australian National University)<br>Multipoint methods for heat flows in geometry |
| 09:50–10:15 | Morning tea/coffee |
| 10:15–11:00 | **Haizhong Li** (Tsinghua University)<br>Hyperbolic $p$-sum and horospherical $p$-Brunn-Minkowski theory in hyperbolic space |
| 11:05–11:50 | Collaboration and Discussion |
| 11:55–14:00 | Lunch break |
| 14:00–16:50 | Collaboration and Discussion |

| Thursday | 14 December 2023 |
|---|---|
| 09:00–09:45 | **Xi-Ping Zhu** (Sun Yat-sen University)<br>Weyl's lemma on RCD metric measure spaces |
| 09:50–10:15 | Morning tea/coffee |
| 10:15–11:00 | **Tom ter Elst** (University of Auckland)<br>The Dirichlet problem for elliptic equations without the maximum principle |
| 11:05–11:50 | **Yingying Zhang** (Tsinghua University)<br>Complex deformation of Fano Kähler-Einstein manifolds |
| 11:55–14:00 | Lunch break |
| 14:00–14:45 | **Yuan Lou** (Shanghai Jiao Tong University)<br>Basic reproduction number and principal eigenvalue |
| 14:50–15:15 | Afternoon tea/coffee |
| 15:15–16:00 | **Haigang Li** (Beijing Normal Univeristy)<br>Babuska problem in composite materials and suspension problem in Stokes flow |
| 16:05–16:50 | **Zhewen Feng** (University of Queensland)<br>Local well-posedness of the Beris-Edwards system with general Landau-de Gennes energy in dimension three |

| Friday | 15 December 2023 |
|---|---|
| 09:00–09:45 | **Shusen Yan** (Central China Normal University)<br>On the critical points for the Robin functions |
| 09:50–10:15 | Morning tea/coffee |
| 10:15–11:00 | **Yong Huang** (Hunan University)<br>Riesz potential, chord measure in integral geometry and their Minkowski problems |
| 11:05–11:50 | **Valentina Wheeler** (University of Wollongong)<br>The vanishing fundamental gap in hyperbolic space |
| 11:55–14:00 | Closing and Lunch break |