# Geometric properties of solutions of non-linear PDE's and their applications <br> July 17-22 2011 

MEALS

*Breakfast (Buffet): 7:00-9:30 am, Sally Borden Building, Monday-Friday
*Lunch (Buffet): 11:30 am-1:30 pm, Sally Borden Building, Monday-Friday
*Dinner (Buffet): 5:30-7:30 pm, Sally Borden Building, Sunday-Thursday
Coffee Breaks: As per daily schedule, 2nd floor lounge, Corbett Hall
*Please remember to scan your meal card at the host/hostess station in the dining room for each meal.

## MEETING ROOMS

All lectures will be held in Max Bell 159 (Max Bell Building accessible by walkway on 2nd floor of Corbett Hall). LCD projector, overhead projectors and blackboards are available for presentations. Note that the meeting space designated for BIRS is the lower level of Max Bell, Rooms 155-159. Please respect that all other space has been contracted to other Banff Centre guests, including any Food and Beverage in those areas.

## SCHEDULE

| Sunday |  |
| :---: | :---: |
| 16:00 | Check-in begins (Front Desk - Professional Development Centre - open 24 hours) Lecture rooms available after 16:00 (if desired) |
| 17:30-19:30 | Buffet Dinner, Sally Borden Building |
| 20:00 | Informal gathering in 2nd floor lounge, Corbett Hall Beverages and a small assortment of snacks are available on a cash honor system. |
| Monday |  |
| 7:00-8:45 | Breakfast |
| 8:45-9:00 | Introduction and Welcome by BIRS Station Manager, Max Bell 159 |
| 9:00-9.50 | R. Magnanini, The location of the hot spot in a grounded convex conductor |
| 10.00-10.30 | Coffee Break, 2nd floor lounge, Corbett Hall |
| 10.30-11.20 | S. Sakaguchi, Reaction-diffusion with similar level sets |
| 11:30-13:00 | Lunch |
| 13:00-14:00 | Guided Tour of The Banff Centre; meet in the 2nd floor lounge, Corbett Hall |
| 14:00 | Group Photo; meet on the front steps of Corbett Hall |
| 14.10-15.00 | G. Philippin, Blow-up phenomena for solutions of some non-linear parabolic problems |
| 15.00-15.30 | Coffee Break, 2nd floor lounge, Corbett Hall |
| 15.30-16.20 | K. Ishige, $L^{p}$ norms of non-negative Schrödinger heat semigroup and the large time behavior of hot spots |
| 16.30-17.20 | C. Nitsch, The longest-shortest fence and sharp Poincaré-Sobolev inequalities |
| 17:30-19:30 | Dinner |


| Tuesday |  |
| :---: | :---: |
| 7:00-9:00 | Breakfast |
| 9:00-9.50 | X. Ma, The convexity of the solutions of heat equation and its geometry applications |
| 10.00-10.30 | Coffee Break, 2nd floor lounge, Corbett Hall |
| 10.30-11.20 | C.-S. Lin, The counting topological degree formulas for a class of generalized Liouville systems |
| 11.30-12.20 | B. Bian, Convexity and partial convexity for solutions of partial differential equations |
| 12:30-13:30 | Lunch |
| 14.00-14.45 | R. M. Hurry-Syrjanen, On the ( $1, p$ )-Poincaré inequality |
| 14:50-15.15 | Coffee Break, 2nd floor lounge, Corbett Hall |
| 15.15-16.00 | J. Dolbeault, Improved Sobolev inequalities, relative entropy and fast diffusion equations |
| 16.05-16:50 | J. Xiao, Singularities for Morrey potentials with applications to some non-linear elliptic systems |
| 16.55-17:25 | R.Stanczy, Uniqueness and multipilicity results for some local and nonlocal ellpitic equations under geometrical assumptions on the domain and the set of solutions |
| 17:30-19:30 | Dinner |
| Wednesday |  |
| 7:00-8:45 | Breakfast |
| 8:45-9.30 | X. Cabré, Uniqueness and stability of saddle-shaped solutions to the Allen-Cahn equation |
| 9:35-10.20 | C. Gutierrez, Geometric optics and the Monge-Ampère type equations |
| 10:25-10.50 | Coffee Break, 2nd floor lounge, Corbett Hall |
| 10.50-11.35 | D. Yang, The Orlicz Minkowski problem |
| 11.40-12.10 | Q. Li, Complex Monge-Ampère equations on Hermitian manifolds |
| 12:15-13:30 | Lunch |
|  | Free Afternoon |
| 17:30-19:30 | Dinner |
| Thursday |  |
| 7:00-8:45 | Breakfast |
| 8:45-9.30 | A. Henrot, About the two first eigenvalues of the Laplacian |
| 9:35-10:20 | C. Trombetti, Sharp estimates for a non-local eigenvalue problem |
| 10:25-10:50 | Coffee Break, 2nd floor lounge, Corbett Hall |
| 10:50-11:35 | J. Spruck, Boundary value problems at infinity and their curvature flows in Hyperbolic space |
| 11:40-12:10 | N. Phuc, A nonlinear Calderón-Zygmund theory arising from the p-laplacian and its applications |
| 12:15-13:30 | Lunch |
| 14.00-14.45 | B. Brandolini, Symmetrization for singular elliptic equations |
| 14:50-15.15 | Coffee Break, 2nd floor lounge, Corbett Hall |
| 15:15-16:00 | F. Gazzola, Radial solutions to the Emden-Fowler equation on the Hyperbolic space |
| 16:05-16:50 | W. Reichel, Electrostatic characterization of spheres |
| 17:30-19:30 | Dinner |

## Friday

| 7:00-8:45 | Breakfast |
| :--- | :--- |
| 8:45-9:30 | A. Cianchi, A sharp iteration principle for higher-order Sobolev-type embeddings |
| 9:35-10:05 | J. Prajapat, On Chern-Simons system of equations:Existence, asymptotic behaviour and |
|  | uniqueness |
| $\mathbf{1 0 : 1 0 - 1 0 : 3 0}$ | Coffee Break, 2nd floor lounge, Corbett Hall |
| $\mathbf{1 0 : 3 0 - 1 1 . 1 5}$ | L. Ni, Estimates on the modulus of expansion for vector fields solving non-linear equa- |
|  | tions |
| 11.20-12:05 B. Kawohl, Variations on the p-Laplacian <br> Checkout by  |  |
| 12 noon. |  |

** 5-day workshops are welcome to use BIRS facilities (2nd Floor Lounge, Max Bell Meeting Rooms, Reading Room) until 3 pm on Friday, although participants are still required to checkout of the guest rooms by 12 noon. **

