



北京師範大學

BEIJING NORMAL UNIVERSITY

International Conference on Partial Differential Equations and Applications

Time of the Conference: May 28-31, 2007

Place of the Conference: Beijing Normal University, China

Invited speakers:

- Samy Bahoura Beijing Normal University, China
 Jiguang Bao Beijing Normal University, China
 Shiting Bao Rutgers University, USA
 Henri Berestycki École des Hautes Études en Sciences Sociales, CAMS, France
 Eric Bonnetier Université Joseph Fourier, France
 Luis Caffarelli University of Texas at Austin, USA
 Daomin Cao Academy of Mathematical and Systems Science, CAS, China
 Xiaqi Ding Academy of Mathematical and Systems Science, CAS, China
 Qiang Du Penn State University, USA & Beijing Normal University, China
 Richard S. Falk Rutgers University, USA
 Bo Guan Ohio State University, USA
 Yuxia Guo Tsinghua University, China
 Cheng He Academy of Mathematical and Systems Science, CAS, China
 Zhongdan Huan Beijing Normal University, China
 Feimin Huang Academy of Mathematical and Systems Science, CAS, China
 Min Ji Academy of Mathematical and Systems Science, CAS, China
 Hyeonbae Kang Seoul National University, Korea
 Yanyan Li Rutgers University, USA & Beijing Normal University, China
 Hailiang Li Capital Normal University, China
 Mikyoung Lim Centre de Mathématiques Appliquées, France
 Shuangjie Peng Central China Normal University, China
 Jinghai Shao Beijing Normal University, China
 Luis Silvestre Courant Institute of Mathematical Sciences, USA
 Zhongwei Tang Beijing Normal University, China
 Laurent Veron Université de Tours, France
 Marie-Francoise Bidault-Veron Université de Tours, France
 Michael Vogelius Rutgers University, USA
 Baoxiang Wang Peking University, China
 Changyou Wang University of Kentucky, USA
 Lihe Wang The University of Iowa, USA
 Shu Wang Beijing University of Technology, China
 Georg Sebastian Weiss University of Tokyo, Japan
 Biao Yin Rutgers University, USA
 Yunyan Yang Renmin University of China, China
 Kihyun Yun Carnegie Mellon University, USA
 Lei Zhang University of Florida, USA
 Liang Zhao Beijing Normal University, China
 Shulin Zhou Peking University, China

Scientific Committee:

- Jiguang Bao (Chair) Beijing Normal University
 Daomin Cao Chinese Academy of Sciences
 Yanyan Li Rutgers University & Beijing Normal University

Organizing Committee:

- Haigang Li Beijing Normal University
 Zhongwei Tang (Chair) Beijing Normal University
 Liang Zhao Beijing Normal University



歡迎廣大師生參加!





偏微分方程及其应用国际会议 在数学科学学院举行

2007年5月28日至31日，偏微分方程及其应用国际会议（International Conference on PDEs and Applications）在北京师范大学数学科学学院举行。国际著名数学家，世界数学家大会一小时报告人，美国科学院院士，University of Texas at Austin 教授 Luis Caffarelli 做了题为 Fully Nonlinear Equations for Integral Diffusions 的学术报告。

本次会议为时三天半，总共有 33 位数学家做了精彩的

报告，其中包括法国著名数学家 Henri Berestycki 教授，Laurent Veron 教授，美国著名数学家 Richard S. Falk 教授，Michael Vogelius 教授，韩国著名数学家 Hyeonbae Kang 以及我校长江学者、美国 Rutgers University 李岩岩教授，我校京师学者、美国 Penn State University 杜强教授等国内外著名数学家。

中国科学院丁夏畦院士，我校前校长陆善镇教授，我校京师学者、美国 Rutgers University 戎小春教授，青年教师和研究生，共计八十余人参加了本次会议。这次会议不仅对于国内外偏微分方程领域的交流起到很大的作用，同时对于我校乃至全国的青年教师、研究生起到了很大的启迪作用。能够听到像 Luis Caffarelli 教授等著名数学家做的精彩演讲，是每一个从事数学研究和数学教育的人莫大的荣幸和难得的机遇。本次会议取得了圆满的成功。

本次会议受北京师范大学和中国科学院共同资助。

International Conference on Partial Differential Equations and Applications



May 28-31, 2007
Beijing Normal University

Programme

Monday May 28, 2007

Time	Place	Title
08:30-09:00	Mathematical Building No 207	Register
09:00-09:20	Mathematical Building No 207	Opening speech by Jiguang Bao Photo at front of Mathematical Building
Chair: Xiqi Ding (Academy of Mathematical and Systems Science, CAS, China)		
09:20-10:10	Mathematical Building No 207	Luis Caffarelli University of Texas at Austin, USA
10:10-10:30	Mathematical Building No 207	Tea Break
10:30-11:20	Mathematical Building No 207	Laurent Veron Université de Tours, France The Precise boundary trace of positive solutions to nonlinear elliptic equations
11:20-12:10	Mathematical Building No 207	Yanyan Li Rutgers University, USA & Beijing Normal University, China Extension of a theorem of Liouville and applications
12:30-14:20	Jinshi Hotel 8th floor	Lunch
Chair (Room 213): Zhongwei Tang (Beijing Normal University, China)		
Chair (Room 214): Feimin Huang (Academy of Mathematical and Systems Science, CAS, China)		
14:30-15:20	Mathematical Building No 213	Mikyong Lim Centre de Mathématiques Appliquées, France Gradient Estimates for Solutions to the Conductivity Problem
	Mathematical Building No 214	Cheng He Academy of Mathematical and Systems Science, CAS, China Slow Decay Solutions to the Incompressible Navier-Stokes System in \mathbb{R}^n
15:20-16:10	Mathematical Building No 213	Yuxia Guo Tsinghua University, China Liouville theorem for polyharmonic equations

	Mathematical Building No 214	Hailiang Li Capital Normal University, China Vanishing of Vacuum for the compressible Navier-Stokes equations
16:10-16:30	Mathematical Building No 213	Tea Break
16:30-17:20	Mathematical Building No 213	Jinghai Shao Beijing Normal University, China
	Mathematical Building No 214	Lei Zhang University of Florida, USA Sharp estimates for blowup solutions of mean field equations with Dirac sources
17:20-18:10	Mathematical Building No 213	Shiting Bao Rutgers University, USA Gradient estimates for the perfect conductivity problem
	Mathematical Building No 214	Liang Zhao Beijing Normal University, China Energy identities for Dirac-harmonic maps
18:30	Yu Madun Restaurant	Banquet

Tuesday May 29, 2007

Time	Place	Title
Chair: Luis Caffarelli (University of Texas at Austin, USA)		
08:30-09:20	Mathematical Building No 101	Henri Berestycki École des Hautes Études en Sciences Sociales, CAMS, France Generalized fronts passing an obstacle
09:20-10:10	Mathematical Building No 101	Michael Vogelius Rutgers University, USA Electromagnetic perturbations caused by small inhomogeneities: polarization effects and thin geometries
10:10-10:30	Mathematical Building No 101	Tea Break

Chair: Laurent Veron (Université de Tours, France)		
10:30-11:20	Mathematical Building No 101	Lihe Wang The University of Iowa, USA Estimates for Degenerate Equations
11:20-12:10	Mathematical Building No 101	Qiang Du Penn State University, USA & Beijing Normal University, China Some surface variational problems with curvature dependent energy
12:20-14:20	Jinshi Hotel 8th floor	Lunch
Chair (Room 213): Bo Guan (Ohio State University, Columbus, USA) Chair (Room 214): Shulin Zhou (Peking University, China)		
14:30-15:20	Mathematical Building No 213	Changyou Wang University of Kentucky, USA Heat flow of harmonic maps whose gradients belong to $L^\infty_t L^n_x$
	Mathematical Building No 214	Kihyun Yun Carnegie Mellon University, USA High Stresses in Fiber-reinforced Composites
15:20-16:10	Mathematical Building No 213	Zhongdan Huan Beijing Normal University, China A Model of Image Processing based on Spectrum
	Mathematical Building No 214	Shuangjie Peng Central China Normal University, China Concentration of solutions for the Yamabe problem on half space
16:10-16:30	Mathematical Building No 213	Tea Break
16:30-17:20	Mathematical Building No 213	Shu Wang Beijing University of Technology, China Quasineutral Limit of Drift-diffusion Models for Semiconductors
	Mathematical Building No 214	Jiguang Bao Beijing Normal University, China Multi-valued Solutions to Hessian Equations
17:30	Jinshi Hotel 8th floor	Dinner

Wednesday May 30, 2007

Time	Place	Title
Chair: Hyeonbae Kang (Seoul National University, Korea)		
08:30-09:20	Mathematical Building No 207	Richard S.Falk Rutgers University, USA Finite Element Exterior Calculus and Numerical Stability
09:20-10:10	Mathematical Building No 207	Luis Silvestre Courant Institute of Mathematical Sciences, USA the obstacle problem for integro differential operators
10:10-10:30	Mathematical Building No 207	Tea Break
Chair: Henri Berestycki (École des Hautes Études en Sciences Sociales, CAMS, France)		
10:30-11:20	Mathematical Building No 207	Marie-Francoise Bidault-Veron Université de Tours, France Boundary singularities for a class of semilinear elliptic equations
11:20-12:10	Mathematical Building No 207	Eric Bonnetier Université Joseph Fourier, France Asymptotics of the voltage potential in a composite medium with localized defects
12:20-14:20	Jinshi Hotel 8th floor	Lunch
Chair (Room 213): Changyou Wang (University of Kentucky, USA)		
Chair (Room 214): Cheng He (Academy of Mathematical and Systems Science, CAS, China)		
14:30-15:20	Mathematical Building No 213	Feimin Huang Academy of Mathematical and Systems Science, CAS, China Contact discontinuities for gas motions
14:30-15:20	Mathematical Building No 214	Bo Guan Ohio State University, Columbus, USA
15:20-16:10	Mathematical Building No 213	Shulin Zhou Peking Univeristy, China Existence and Uniqueness of Weak Solutions for A Nonlinear Diffusion Equation

	Mathematical Building No 214	Yunyan Yang Renmin University of China, China Rigidity of the harmonic map heat flow from S^2 to a Kahler manifold
16:10-16:30	Mathematical Building No 213	Tea Break
16:30-17:20	Mathematical Building No 213	Samy Bahoura Beijing Normal University, China
	Mathematical Building No 214	Zhongwei Tang Beijing Normal University, China Multiplicity of standing wave solutions of Nonlinear Schrodinger Equations with Electromagnetic Fields
18:30	Jinshi Hotel 8th floor	Dinner
Thursday May 31, 2007		
Time	Place	Title
Chair: Michael Vogelius (Rutgers University USA)		
08:30-09:20	Mathematical Building No 207	Hyeonbae Kang Seoul National University, Korea Asymptotic Analysis of High-Contrast Phononic Crystals and a Criterion for the Band-Gap Opening
09:20-10:10	Mathematical Building No 207	Daomin Cao Academy of Mathematical and Systems Science, CAS, China Infinitely many solutions for elliptic problems involving critical Sobolev exponents
10:10-10:30	Mathematical Building No 207	Tea Break
Chair: Daomin Cao (Academy of Mathematical and Systems Science, CAS, China)		
10:30-11:20	Mathematical Building No 207	Weiping Yin Capital Normal University, China On solutions of Dirichlet's problems of the complex Monge-Ampere equation for the cartan-hartogs domain of the third type
11:20-14:20	Jinshi Hotel 8th floor	Lunch