



南开大学陈省身数学研究所

**International Conference on
Variational Methods (ICVAM-4)**

May 14 – May 18, 2018

Chern Institute of Mathematics

Nankai University, Tianjin, China

Sponsors:

Chern Institute of Mathematics, Nankai University

Web site:

<http://www.cim.nankai.edu.cn/activites/conferences/hy20180514/index.htm>

Organizing Committee:

Huagui Duan (Nankai University)

Chungen Liu (Nankai University and Guangzhou University)

Zhi-Qiang Wang (Chairman, Tianjin University & Utah State University)

Duanzhi Zhang (Nankai University)

Chaofeng Zhu (Nankai University)

Invited speakers:

Thomas Bartsch (Giessen University)

Daomin Cao (AMSS, Chinese Acad. Sci. & Guangzhou University)

Kung-Ching Chang (Peking University)

Kuo-Chang Chen (National Tsing Hua University)

Alain Chenciner (University Paris 7 and IMCCE)

Yanheng Ding (AMSS of Chinese Academy of Sciences)

Yihong Du (University of New England)

Huagui Duan (Nankai University)

Ivar Ekeland (Université Paris-Dauphine)

Viktor Ginzburg (University of California Santa Cruz)

Changfeng Gui (University of Texas at San Antonio)

Xijun Hu (Shandong University)

Louis Jeanjean (Université Bourgogne Franche-Comté)

Meiyue Jiang (Peking University)

Yanyan Li (Rutgers University)

Kening Lu (Brigham Young University)

Shuangjie Peng (Central China Normal University)

Hans-Bert Rademacher (Universität at Leipzig)

Junping Shi (College of William and Mary)

Shanzhong Sun (Capital Normal University)

Iskander Taimanov (Sobolev Institute of Mathematics)

Kazunaga Tanaka (Waseda University)

Wei Wang (Peking University)

Xu-Jia Wang (Australian National University)

Juncheng Wei (University of British Columbia)

Zhihong Xia (Northwestern University & Southern Univ. of Sci. and Tech.)

Guowei Yu (Università di Torino)

Chongchun Zeng (Georgia Institute of Technology)

Duanzhi Zhang (Nankai University)

Feng Zhou (East China Normal University)

Chaofeng Zhu (Nankai University)

Wenming Zou (Tsinghua University)

International Conference on Variational Methods (ICVAM-4)

Program at a glance (May 14- May 18, 2018)

Lecture Hall on the second floor, Shiing-Shen Building, Chern Institute of Mathematics

	<u>MON</u> (5/14)	<u>TUE</u> (5/15)	<u>WED</u> (5/16)	<u>THU</u> (5/17)	<u>FRI</u> (5/18)
<u>Chair</u>	Z. Q. Wang	J. C. Wei	X. J. Wang	Y. Y. Li	Z. H. Xia
8:20-9:05	<i>Opening & group photo</i>	A. Chenciner	I. Taimanov	X. J. Wang	Y. Y. Li
9:10-9:55	K. C. Chang	K. N. Lu	H. B. Rademacher	J. C. Wei	C. F. Gui
10:00-10:20	<u>Coffee Break</u>				
<u>Chair</u>	C. G. Liu	K. C. Chen	D. M. Cao	S. J. Peng	W. M. Zou
10:20-11:05	I. Ekeland	M. Y. Jiang	L. Jeanjean	D. M. Cao	C. C. Zeng
11:10-11:55	V. Ginzburg	S. Z. Sun	C. F. Zhu	K. Tanaka	D. Z. Zhang
12:00-2:00	<u>Lunch Break</u>				
<u>Chair</u>	K. N. Lu	Y. H. Du	<u>Free Time</u>	C. C. Zeng	C. F. Gui
2:00-2:45	T. Bartsch	K. C. Chen		Z. H. Xia	W. M. Zou
2:50-3:35	Y. H. Du	F. Zhou		S. J. Peng	G. W. Yu
3:40-4:00	<u>Coffee Break</u>	(3:40-4:25) H. G. Duan		<u>Coffee Break</u>	
<u>Chair</u>	F. Zhou			M. Y. Jiang	
4:00-4:45	X. J. Hu	(4:30-4:50)		J. P. Shi	
4:50-5:35	W. Wang	<u>Coffee Break</u>	Y. H. Ding		
6:00	<u>Conference dinner</u>	<u>Dinner</u>			

International Conference on Variational Methods (ICVAM-4)

May 14, 2018

Place: Lecture Hall on the second floor, Shiing-Shen Building

Chair: Zhi-Qiang Wang

08:20-09:05 *Opening ceremony and photo*

09:10-09:55 **Kung-Ching Chang**

Critical point theory on the boundary of a convex polytope and applications to the spectral theory of 1- Laplacian on graphs

10:00-10:20 *Coffee Break*

Chair: Chungjen Liu

10:20-11:05 **Ivar Ekeland**

Two local surjection theorems, soft and hard

11:10-11:55 **Viktor Ginzburg**

Multiplicity of closed Reeb orbits on prequantization bundles

Lunch

Chair: Kening Lu

14:00-14:45 **Thomas Bartsch**

Vortex dynamics in 2D

14:50-15:35 **Yihong Du**

Logarithmic shifting in spreading governed by the Fisher-KPP porous medium equation

15:40-16:00 *Coffee Break*

Chair: Feng Zhou

16:00-16:45 **Xijun Hu**

Index theory and stability of elliptic relative equilibria in Planar n -body problem

16:50-17:35 **Wei Wang**

Closed geodesics on compact Finsler manifolds

18:00 *Dinner*

May 15, 2018

Chair: Juncheng Wei

08:20-09:05 **Alain Chenciner**
n-body relative equilibria in higher dimensions

09:10-09:55 **Kening Lu**
SRB measures, Entropy, and Horseshoe for infinite dimensional dynamical systems

10:00-10:20 *Coffee Break*

Chair: Kuo-Chang Chen

10:20-11:05 **Meiyue Jiang**
A Degree Counting Formula for Periodic Solutions of Autonomous Differential Equations

11:10-11:55 **Shanzhong Sun**
Non-embedding theorems in sub-Riemannian geometry

Lunch

Chair: Yihong Du

14:00-14:45 **Kuo-Chang Chen**
Variational nature of Keplerian orbits

14:50-15:35 **Feng Zhou**
Existence/nonexistence of positive solutions of Lane-Emden equation involving nonhomogeneous potential

15:40-16:25 **Huagui Duan**
The index quasi-periodicity, global homological iterations and multiplicity of closed geodesics

16:30-16:50 *Coffee Break*

18:00 *Dinner*

May 16, 2018

Chair: Xujia Wang

08:20-09:05 **Iskander Taimanov**

Closed geodesics on non-simply connected manifolds

09:10-09:55 **Hans-Bert Rademacher**

Critical values of homology classes of loops and positive curvature

10:00-10:20 *Coffee Break*

Chair: Daomin Cao

10:20-11:05 **Louis Jeanjean**

*On a class of elliptic problems with quadratic growth in the gradient,
some non coercive cases*

11:10-11:55 **Chaofeng Zhu**

The Maslov Index in Symplectic Banach Spaces

Lunch

Free Time

18:00 *Dinner*

May 17, 2018

Chair: Yanyan Li

08:20-09:05 **Xujia Wang**
The four vertex theorem for space curve

09:10-09:55 **Juncheng Wei**
Adler-Moser polynomials, Gross-Pitaevskii, and KP-I

10:00-10:20 *Coffee Break*

Chair: Shuangjie Peng

10:20-11:05 **Daomin Cao**
Existence and stability of steady vortex patches for incompressible 2-d Euler equations

11:10-11:55 **Kazunaga Tanaka**
A new minimax approach to nonlinear scalar field equations with L^2 constraint

Lunch

Chair: Chongchun Zeng

14:00-14:45 **Zhihong Xia**
Asteroids in solar system and their evolutions

14:50-15:35 **Shuangjie Peng**
Some results on planar vortex patch in incompressible steady flow

15:40-16:00 *Coffee Break*

Chair: Meiyue Jiang

16:00-16:45 **Junping Shi**
Elliptic Systems of Schrodinger type with quadratic nonlinearities

16:50-17:35 **Yanheng Ding**
Some recent results on Dirac equations on spin manifolds

18:00 *Dinner*

May 18, 2018

Chair: Zhihong Xia

08:20-09:05 **Yanyan Li**
Homogeneous axisymmetric solutions of incompressible stationary Navier-Stokes equations and vanishing viscosity limit

09:10-09:55 **Changfeng Gui**
The Sphere Covering Inequality and its applications

10:00-10:20 *Coffee Break*

Chair: Wenming Zou

10:20-11:05 **Chongchun Zeng**
On steady states with concentrated vorticity of the 2-dim Euler equation on bounded domains

11:10-11:55 **Duanzhi Zhang**
 \mathcal{S}^1 Index and Brake Orbits on Tori

Lunch

Chair: Changfeng Gui

14:00-14:45 **Wenming Zou**
On Isolated Singularities of Fractional Semi-Linear Elliptic Equations

14:50-15:35 **Guowei Yu**
Connecting planar linear chains in the spatial N-body problem with equal masses

15:40-16:00 *Coffee Break*

18:00 *Dinner*