

Contents

Invited Lectures

Geometric Analysis, Differential Geometry, Symplectic Geometry

On CR Li-Yau-Hamilton Inequality in Pseudohermitian $(2n + 1)$-manifolds	5
<i>Shu-Cheng Chang</i>	
Contact Spin^c Structure, Embeddability of CR Structure, and Positivity of the Mass	23
<i>Jih-Hsin Cheng</i>	
Universal Estimates for Eigenvalues and Applications	37
<i>Qing-Ming Cheng</i>	
The Geometry of Hypersurfaces in Heisenberg Groups	53
<i>Hung-Lin Chiu and Sin-Hua Lai</i>	
Bounded Harmonic Functions on Complete Manifolds of Nonpositive Curvature	69
<i>Qing Ding</i>	
A Survey on Rigidity Problems in Geometry and Topology of Submanifolds	79
<i>Juan-Ru Gu, Hong-Wei Xu, Zhi-Yuan Xu and En-Tao Zhao</i>	
Hodge Metric Completion of the Moduli Space of Calabi–Yau Manifolds	101
<i>Kefeng Liu and Yang Shen</i>	
Some Recent Progress on Mean Curvature Flow of Arbitrary Codimension	115

Kefeng Liu, Hongwei Xu and Entao Zhao

Cohomologies on Symplectic Manifolds	133
---	-----

Li-Sheng Tseng

Surgery and Isotopy of Lagrangian Surfaces	143
---	-----

Mei-Lin Yau

Geometric Analysis on Alexandrov Spaces	163
--	-----

Hui-Chun Zhang and Xi-Ping Zhu

Topology, Geometry and Mathematical Physics

Anomalies, Gauge Groups and Modular Forms	179
--	-----

Fei Han

Toric, Global, and Generalized SYZ	191
---	-----

Siu-Cheong Lau

An Update of Quantum Cohomology of Homogeneous Varieties ..	211
--	-----

Naichung Conan Leung and Changzheng Li

On the B-twisted Quantum Geometry of Calabi-Yau Manifolds ..	237
---	-----

Qin Li and Si Li

Reduced Open Gromov-Witten on HyperKähler Manifolds	249
--	-----

Yu-Shen Lin

Equivariant Bordism of 2-torus Manifolds and Unitary Toric

Manifolds: A Survey	267
----------------------------------	-----

Zhi Lü

Computing Topological Invariants Using Fixed Points	285
--	-----

Loring W. Tu

Bergman Kernel, Deformation Quantization and Feynman

Diagram Formulas	299
-------------------------------	-----

Hao Xu

Some Results of the Knot Invariants Inspired by Physics	317
--	-----

Shengmao Zhu

Dynamical System, Control Theory, Optimization, Functional Analysis, Fractals

- Bounded Geometry and Families of Meromorphic Functions with Two Asymptotic Values** 343

Tao Chen, Yunping Jiang and Linda Keen

- Invariant Cylinder near Complete Resonance** 363

Chong-Qing Cheng and Min Zhou

- On Stability of Perturbed Metric-preserved Mappings on Banach Spaces** 377

Lixin Cheng

- First Passage Time in Markov Chains and in Random Walks on Countable Abelian Groups** 387

Ai-Hua Fan

- Iteration of Transcendental Entire Maps on Berkovich Affine Space** 427

Shilei Fan and Yuefei Wang

- Li-Yau Inequality on Graphs** 445

Yong Lin

Computational Mathematics, Imaging, and Mathematical Biology

- Modeling and Simulation on Chinese Medicine, Acupuncture and Moxibustion** 463

Yannick Deleuze, Marc Thiriet and Tony W. H. Sheu

- Discrete Surface Ricci Flow** 477

David Xianfeng Gu, Wei Zeng, Lok Ming Lui, Feng Luo and Shing-Tung Yau

- Fast Eigensolvers for Three Dimensional Lossless Drude Dispersive Metallic Photonic Crystals** 505

Tsung-Ming Huang, Han-En Hsieh, Wen-Wei Lin and Weichung Wang

Beltrami Representation for Diffeomorphisms and Its Applications	523
<i>Lok Ming Lui, David Xianfeng Gu, Wei Zeng and Shing-Tung Yau</i>	
Wetting and Spreading of Drops on Rough Surfaces	553
<i>Yi Shi and Xiao-Ping Wang</i>	
Partial Differential Equations	
Incompressible Elastic Waves and Viscoelastic Fluids	575
<i>Zhen Lei</i>	
Bubbling Solutions for the Chern-Simons Model on a Torus	587
<i>Chang-Shou Lin and Shusen Yan</i>	
Vector Solutions for Nonlinear Schrödinger Systems with Linear or Nonlinear Coupling	599
<i>Shuangjie Peng</i>	
Blowup Solutions of Elliptic Systems in Two Dimensional Spaces	617
<i>Lei Zhang</i>	
On the Global Well-posedness of 2-D Inhomogeneous Navier-Stokes System with Variable Viscosity	625
<i>Ping Zhang</i>	