

## Index Theory and Complex Geometry Part 2

(29 Apr 2024–10 May 2024)

### List of Speakers & Talks' Titles

Name & Affiliation	Talk Title
Section A: Recent progresses in Complex Geometry	
Fabrizio Bianchi <i>Università di Pisa, Italy</i>	Parabolic implosion in two complex variables
Jean-Michel Bismut <i>Université Paris-Saclay, France</i>	<i>IMS Distinguished Lecture Series</i> The hypoelliptic Laplacian in real and complex geometry
Slawomir Dinew <i>Jagiellonian University, Poland</i>	Geodesics in function spaces
Siarhei Finski <i>École Polytechnique, France</i>	Wess-Zumino-Witten equation and asymptotic semistability of direct images
Chin-Yu Hsiao <i>Academia Sinica, Taipei</i>	Semi-classical analysis in several complex variables
Lucas Kaufmann <i>Université d'Orléans, France</i>	Localization of characteristic forms of coherent sheaves and holomorphic foliations
Slawomir Kolodziej <i>Jagiellonian University, Poland</i>	Hölder continuous solution to complex Monge-Ampère equations
George Marinescu <i>Universität zu Köln, Germany</i>	Toeplitz operators and zeros of square-integrable random holomorphic sections
Ngaiming Mok <i>The University of Hong Kong, Hong Kong</i>	From holomorphic isometries to functional transcendence on quotients of bounded symmetric domains by arbitrary cocompact lattices
Ngoc-Cuong Nguyen <i>Korea Advanced Institute of Science &amp; Technology, Korea</i>	Regularity of the Siciak-Zaharjuta extremal function on compact Kähler manifolds
Junjiro Noguchi <i>The University of Tokyo, Japan</i>	On Lang's conjecture, number of rational sections and related topics

Name & Affiliation	Talk Title
Vamsi Pritham Pingali <i>Indian Institute of Science, India</i>	Gravitating vortices and cosmic strings
Karim Rakhimov <i>Uzbekistan</i>	Dynamics of Hénon-like maps
Min Ru <i>University of Houston, USA</i>	Non-integrated defect relation for holomorphic curves into algebraic varieties
Nikhil Savale <i>Universität zu Köln, Germany</i>	The eta invariant of a circle bundle on a Fano manifold
Laurent Stolovitch <i>Université Côte d'Azur, France</i>	Local rigidity of actions of isometries on compact real analytic Riemannian manifolds
Do Duc Thai <i>Hanoi National University of Education, Vietnam</i>	Volume of Components of Lelong Upper-Level Sets
Gabriel Vigny <i>Université de Picardie Jules Verne, France</i>	The Central Limit Theorem for generic birational maps
Duc-Viet Vu <i>Universität zu Köln, Germany</i>	Lebesgue points of functions in complex Sobolev spaces
Julie Tzu-Yueh Wang <i>Academia Sinica, Taipei</i>	GCD, abc and quasi-hyperbolicity
Xiangyu Zhou <i>Chinese Academy of Sciences, China</i>	Multiplier ideal/submodule sheaves and converse $L^2$ theory
Section B: Recent progresses in Index Theory	
Jean-Michel Bismut <i>Université Paris-Saclay, France</i>	<i>IMS Distinguished Lecture Series</i> Hypoelliptic Laplacian and the trace formula
Qing-Ming Cheng <i>Fukuoka University, Japan</i>	Critical points of functionals and their geometry

Name & Affiliation	Talk Title
Xianzhe Dai <i>University of California, Santa Barbara, USA</i>	Positive mass theorem and positive scalar curvature for singular metrics
Jixiang Fu <i>Fudan University, China</i>	A deformed Hermitian Yang-Mills flow
Sebastian Goette <i>Universität Freiburg, Germany</i>	Classifying Compact $G_2$ -Manifolds
Bo Liu <i>East China Normal University, China</i>	Recent progress on Bismut-Cheeger eta forms
Kefeng Liu <i>University of California, Los Angeles, USA</i>	Logarithmic vanishing theorems on compact Kahler manifolds
Xiaonan Ma <i>Institut de Mathématiques de Jussieu-Paris Rive Gauche, France</i>	A glimpse into Weiping Zhang's mathematical work
Paul-Emile Paradan <i>Université de Montpellier, France</i>	Multiplicities of discrete series with respect to a symmetric pair and index theory
Paolo Piazza <i>Sapienza Università di Roma, Italy</i>	Analytic transfer in K-homology for Witt stratified spaces
Xiang Tang <i>Washington University, USA</i>	Symplectic Morse Theory and Witten Deformation
Zizhou Tang <i>Nankai University, China</i>	Orthogonal almost complex structure and its Nijenhuis tensor
Guofang Wang <i>Universität Freiburg, Germany</i>	A higher order mass
Siye Wu <i>National Tsing Hua University, Hsinchu</i>	Classical Aspects of Higher-Form Symmetry
Ping Xu <i>The Pennsylvania State University, USA</i>	Duflo-Kontsevich type theorem for dg manifolds

Name & Affiliation	Talk Title
Kenichi Yoshikawa <i>Kyoto University, Japan</i>	Degenerations of Riemann surfaces and small eigenvalues of Laplacian
Guoliang Yu <i>Texas A&amp;M University, USA</i>	An index theorem for manifolds with polyhedral boundary and scalar curvature rigidity

This list is accurate as of 10 May 2024 and is subjected to changes.