

The 3rd Shot of The 13th MSJ-SI “Differential Geometry and Integrable Systems”

~ Celebrating Professor Yoshihiro Ohnita’s retirement ~

Dates: March 3 - 13, 2023

Venue: Sugimoto Campus, Osaka Metropolitan University & Online

Supports

– Mathematical Society of Japan

Principal Investigator: Yoshihiro Ohnita

– OCAMI (MEXT Joint Usage/Research Center on Mathematics and Theoretical Physics)

Principal Investigator: Masashi Yasumoto

– JSPS Grant-in-Aid for Scientific Research (S) No.17H06127

Principal Investigator: Masa-Hiko Saito, Co-Investigator: Yoshihiro Ohnita

– JSPS Grant-in-Aid for Scientific Research (A) No.18H03668

Principal Investigator: Martin Guest, Co-Investigator: Yoshihiro Ohnita

– JSPS Grant-in-Aid for Scientific Research (C) No.21K03250

Principal Investigator: Takashi Sakai

– JSPS Grant-in-Aid for Early-Career Scientists No.20K14314

Principal Investigator: Masashi Yasumoto



**The Mathematical
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Program

March 3

- 9:50-10:00 **Opening**
- 10:00-10:50 Josef Dorfmeister (TU Munich, Germany)
Totally symmetric and finite uniton type harmonic maps into arbitrary inner symmetric spaces
- 11:20-12:10 Tetsuya Taniguchi (Nihon University, Japan)
Characterizations of Ricci flat metrics and Lagrangian submanifolds in terms of the variational problem
- 14:30-15:00 Masahiro Morimoto (OCAMI Osaka Metropolitan University, Japan)
Minimal PF submanifolds in Hilbert spaces with symmetries
- 15:50-16:20 Natsuo Miyatake (IMI Kyushu University, Japan)
Generalizations of the Hermitian-Einstein equation for cyclic Higgs bundles
- 16:40-17:10 Arata Komyo (Kobe University, Japan)
A nonclassical algebraic solution of a 3-variable irregular Garnier system
- 17:30-18:20 Udo Hertrich-Jeromin (Online, TU Wien, Austria)
Symmetry breaking

March 4

- 10:00-10:50 Lynn Heller (BIMSA, China)
On the existence of holomorphic curves in compact quotients of $SL(2, \mathbb{C})$
- 11:20-12:10 Katsuhiko Moriya (University of Hyogo, Japan)
Transforms of minimal surfaces
- 14:30-15:00 Masaya Hara (Kobe University, Japan)
Darboux transformations in the Lorentz-Minkowski plane
- 15:50-16:20 Yudai Hateruma (Waseda University, Japan)
On some Lie-theoretic solutions of the tt^ -Toda equations*
- 16:40-17:10 Artur Sergeev (Online, Silesian University in Opava, Czech Republic)
Integrable systems in four independent variables related to contact structures in dimension three
- 17:30-18:20 Ulrich Pinkall (Online, TU Berlin, Germany)
Snakes, falling cats and fiber bundles

March 5

- 10:00-10:50 Robert Kusner (UMass Amherst, USA)
Eigenspaces and minimal surfaces
- 11:20-12:10 Hui Ma (Online, Tsinghua University, China)
Construction of minimal Lagrangian surfaces in $\mathbb{C}P^2$ via integrable system
- 14:30-15:00 Yoshiki Jikumaru (IMI Kyushu University, Japan)
On the truss structures in architectural design based on discrete isothermic surfaces
- 15:50-16:20 Masafumi Shimada (Kyushu University, Japan)
On a heat equation of $SL(2, \mathbb{R})$, and a future direction of its q -deformation
- 16:40-17:10 Albert Wood (National Taiwan University, Taiwan)
Immersed special Lagrangians and mean curvature flow
- 17:30-18:20 Volker Branding (Online, University of Vienna, Austria)
Higher order generalizations of harmonic maps

March 6

- 10:00-10:50 Michael Wolf (Georgia Institute of Technology, USA)
Ray structures on Teichmüller space
- 11:20-12:10 Seiichi Udagawa (Online, Nihon University, Japan)
Solving the sine-Gordon equation and its discretization

March 7

Free Discussion

March 8

- 13:10-14:00 Fran Burstall (University of Bath, UK)
Stability of harmonic maps to symmetric spaces
- 14:30-15:20 Sebastian Heller (BIMSA, China)
New minimal Lagrangian surfaces in $\mathbb{C}P^2$
- 16:10-17:00 Katrin Leschke (University of Leicester, UK)
Periodic Darboux transforms
- 17:30-18:20 Alexander Bobenko (Online, TU Berlin, Germany)
Orthogonal ring patterns and discrete surfaces

March 9

- 10:00-10:50 Qing-Ming Cheng (Fukuoka University, Japan)
Singularities of mean curvature flow
- 11:20-12:10 Emma Carberry (University of Sydney, Australia)
Deformations of spectral curve data
- 14:30-15:00 Andrew. Sageman-Furnas (NC State University, USA)
Constructing isometric tori with the same curvatures
- 15:50-16:20 Gudrun Szewieczek (TU Berlin, Germany)
Smooth and discrete constrained elastic curves in space forms
- 16:40-17:10 Wai Yeung Lam (University of Luxembourg, Luxembourg)
Deformation space of circle patterns
- 17:30-18:20 Yousuke Ohyama (Tokushima University, Japan)
Global geometry of q -Painlevé equations

March 10

- 10:00-10:50 Quo-Shin Chi (Washington University in St. Louis, USA)
Fano 3-folds and classification of constantly curved holomorphic 2-spheres of degree 6 in the complex Grassmannian $G(2, 5)$
- 11:20-12:10 Zizhou Tang (Online, Chern Institute of Mathematics, China)
On two questions of I. M. James
- 14:10-14:40 Yuichiro Taketomi (OCAMI Osaka Metropolitan University, Japan)
A maximal element of a moduli space of Riemannian metrics
- 14:50-15:20 Fumika Mizoguchi (Osaka City University, Japan)
Nilpotent Lie algebras obtained by quivers and Ricci solitons
- 16:00-16:30 Luis Pedro Castellanos Moscoso (OCAMI Osaka Metropolitan University, Japan)
Symplectic structures on almost abelian Lie algebras
- 16:40-17:10 Yuuki Sasaki (National Institute of Technology, Tokyo College, Japan)
Some submanifolds of the associative Grassmann manifold
- 17:30-18:20 Franz Pedit (UMass Amherst, USA)
50 years of harmonic maps

March 11

- 10:00-10:50 Motohico Mulase (UC Davis, USA)
The Gaiotto correspondence, quantization, and connections defined over $\overline{\mathbb{Q}}$
- 11:20-12:10 Masa-Hiko Saito (Kobe Gakuin University, Japan)
Canonical coordinates of moduli spaces of connections and Higgs bundles, isomonodromic deformations and differential equations of Painlevé type
- 14:30-15:00 Eriko Shinkawa (Online, AIMR Tohoku University, Japan)
Geometry of anisotropic double crystals and classification of some examples
- 15:50-16:20 Takafumi Matsumoto (Kobe University, Japan)
Moduli space of rank three logarithmic connections on the projective line with three poles
- 16:40-17:10 Ryo Ohkawa (OCAMI Osaka Metropolitan University, Japan)
Wall-crossing formula for framed quiver moduli
- 17:30-18:20 Motoko Kotani (Tohoku University, Japan)
Discrete surface theory, and convergence of sequence of subdivided discrete surfaces

March 12

- 10:00-10:50 Indranil Biswas (Tata Institute of Fundamental Research, India)
Symplectic geometry of the moduli spaces
- 11:20-12:10 Kenji Kajiwara (IMI Kyushu University, Japan)
Generation of aesthetic shapes by integrable geometry
- 14:30-15:20 Reiko Miyaoka (Tohoku University, Japan)
Review of my research
- 16:10-17:00 Yoshihiro Ohnita (OCAMI Osaka Metropolitan University, Japan)
Minimal submanifolds, harmonic maps and isoparametric submanifolds
- 17:00-17:10 **Closing**

March 13

Free Discussion