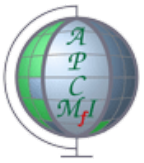

Forum "Math-for-Industry" 2021

Poster Session

Tuesday, December 14, 2021, 2pm-4pm ICT

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1. On the non-connectivity of moduli spaces of line arrangements

Poster: [click here]

Benoît GUERVILLE-BALLÉ
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I'm a post-doctorant at IMI - Kyushu University. My research area is currently low-dimensional topology. More precisely, I study the topology of algebraic curves in the complex projective plane. I am interested in the relations between the combinatorial data (local type of singularities, incidence relations, etc.) and the topology of the embedding of the curve in the plane or of its complement.

2. Flat families of cyclic covers

Poster: [click here]

Huy DANG
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I am a postdoc researcher at the Vietnam Institute for Advanced Study in Mathematics (VIASM). Before joining VIASM, I was an IM-Simons postdoc at the Institute of Mathematics, Vietnam Academy of Science and Technology. I obtained my Ph.D. in algebraic geometry at the University of Virginia in May 2020 under the supervision of Andrew Obus. Before that, I was a Master student in Mathematics at Louisiana State University. I am interested in arithmetic geometry. Specifically, I have been studying the lifting and the reduction of wildly ramified Galois covers of curves.

3. The impact of extreme weather events on calorie intake – income relationship: Semiparametric estimates for Vietnam

Poster: [click here]

Huong Thi TRINH

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Joint work with
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Dr. Huong Thi TRINH obtained a doctorate in mathematics from The University of Toulouse in France in 2018. She is a lecturer at Thuongmai University and a postdoc at VIASM. Her research interests focus on applied statistics, applied econometrics, Compositional Data Analysis (CoDa), and non-parametric methods. Her work covers both theoretical models and empirical studies, which have been published in several high-impact journals. Huong has also proactively supported many activities of the probability and statistics field in Vietnam, including conferences and a series of courses, supported by VIASM, on basic and advanced statistics for mathematical lecturers since 2019.

4. Optimality conditions based on the Fréchet second-order subdifferential

Poster: [click here]

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DUONG Thi Viet An is a lecturer at Thai Nguyen University of Sciences, Vietnam. She received her Ph.D. degree from Institute of Mathematics, VAST, in 2018. Duong was a postdoctoral fellow at Institute of Mathematics, VAST(Vietnam) for the 2019/2020 academic year. Now, she is a postdoctoral fellow at Hangzhou Dianzi University (China).

5. An algorithm for counting the number of solutions for brick Wang tiling

Poster: [click here]

Yang HANG

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I am a doctoral student at Kyushu University, enrolled in 2021. Prior to that, I received my master's degree in China. I am interested in graph theory. I worked on tree and lattice path in the past years. My current research topic is Wang Tile and I focus on counting the number of valid solutions.

6. The ground state of the semi-relativistic Pauli-Fierz Hamiltonian

Poster: [click here]

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Itaru Sasaki, Department of Mathematics, Shinshu University, Japan

I am a postdoctoral researcher at the Institute of Mathematics for Industry, Kyushu University. I obtained a PhD from the same university. My research focuses on spectral analysis of particle-field interaction models in quantum field theory.

7. FEM study on the elastic deformation process of materials in industry

Poster: [click here]

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Joint work with
Thi Thanh Mai TA, School of Applied Mathematics and Informatics, HaNoi University of Science and Technology.

My name is Phuong Cuc. I come from Hai Phong city. I am a four year student at HaNoi University of Science and Technology. My major is Mathematics and Informatics. I love math. My favorite quote: Mathematics is always around us.

8. The complexity of the parity argument with potential

Poster: [click here]

Takashi ISHUZUKA
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I'm a doctoral student at Graduate School of Mathematics, Kyushu University. Also, I have been a JSPS Research Fellow DC2 since 2021. My research interests include Computational Complexity Theory and (Algorithmic) Game theory. I'm especially interested in the complexity of search problems around PPAD, PLS, and EOPL.

9. Differential Geometry Formulation of Hanging Membranes

Poster: [click here]

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Dr. Yoshiki Jikumaru is a postdoctoral researcher at Institute of Mathematics for Industry in Kyushu University. I got my Ph.D. at Kyushu University in 2020 under the supervision of Prof. Miyuki Koiso. I am a member of CREST ED3GE (Evolving Design and Discrete Differential GEometry). Recently, I am interested in the differential geometric analysis for the shell membrane theory and its application to structural engineering for architecture.

10. Reeb graphs of smooth functions with prescribed preimages

Poster: [click here]

Naoki KITAZAWA
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Naoki Kitazawa is a postdoctoral researcher at Institute of Mathematics for Industry, Kyushu University. He is interested and specialized in the singularity theory of differentiable maps, differential topology and algebraic topology of manifolds and related topics of geometry. Today's poster concerns one of his related studies

N. Kitazawa, On Reeb graphs induced from smooth functions on 3-dimensional closed orientable manifolds with finitely many singular values, accepted for publication in Topological Methods in Nonlinear Analysis after a refereeing process, arxiv:1902.08841.

11. Strategic delegation in bilateral environmental agreements under heterogeneity

Poster: [click here]

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I am a postdoctoral researcher in the Institute of Mathematics for industry, Kyushu University. Before that, I have finished my doctoral course in the department of Economics, in the same university. My research focuses on game theory and environmental economics, especially on using non-cooperative game theory to model the formation of international environmental agreements between developed and developing countries.

12. Modelling Housing Feature Impacts on Sale Price in Newly Developed Suburbs

Poster: [click here]

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Joint work with
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Andrew MASON, Department of Engineering Science, University of Auckland, New Zealand

I am a PhD student currently in my third year of study at the University of Auckland. I also completed my undergraduate and master's degree in engineering science at the University of Auckland. My masters research was focused on improving healthcare

pipelines through process mining techniques. My current project, supported by MADE Group Limited, aims to analyze housing feature impacts on sale values in newly developed suburbs.

13. Homotopifying abstraction of abstraction of algebra

Poster: [click here]

Yuki MAEHARA
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Yuki Maehara is a postdoctoral researcher at the Institute of Mathematics for Industry, Kyushu University. He is interested in developing the foundations for algebraic methods in geometry. More specifically, category theory allows one to extract essential features of usual algebra in an abstract manner, and Yuki's research studies homotopical variants of such features. Yuki particularly enjoys untangling combinatorial intricacies arising from seemingly innocent algebraic statements.

14. Non-log liftable log del Pezzo surfaces of rank one in characteristic five

Poster: [click here]

Masaru NAGAOKA
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Masaru Nagaoka is a postdoctoral researcher at the Institute of Mathematics for Industry, Kyushu University. His research area is algebraic geometry. Recently, he is interested in phonomena which cannot be observed in algebraic varieties over the field of complex numbers, but occurs in those over the field of positive characteristic.

15. Zeros of random power series with finitely dependent Gaussian coefficients

Poster: [click here]

Kohei NODA
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Joint work with *Professor. Tomoyuki Shirai*.

Kohei Noda is a PhD student currently in his first year of study at Kyushu University. And he is also in Graduate Program of Mathematics for Innovation, GPMI. He completed my undergraduate and master's degree in mathematics at Kyushu University. His research interests are probability theory and mathematical physics. Specifically, he has been studying the generalization of zeros of Gaussian analytic function and signal processing. His aim is to apply zeros of Gaussian analytic function theory into engineering problems and to find a new connection among probability theory, complex analysis and engineering problems.

16. Augmented Lagrangian Method for Convex Piecewise Linear-Quadratic Optimization Problems

Poster: [click here]

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2011 - Present: Researcher at Institute of Mathematics, VAST, Vietnam
2021: Ph.D. in Applied Mathematics at Wayne State University, Michigan, USA
2011: MSc in ACSYON Program at University of Limoges, Limoges, France
2009: BS in Pedagogy of Mathematics at Hanoi National University of Education, Hanoi, Vietnam

17. Optimal control problem in linear elasticity

Poster: [click here]

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Joint work with
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Quang Huy Nguyen is a fourth-year student at Hanoi University of Science and Technology. At the university, he has learned the importance of applying mathematics theories to model many modern Industrial problems from experts in the field, including his teacher, PhD. Thi Thanh Mai Ta. He's recently been interested in the inverse problem in linear elasticity. Huy is nearing the end of his Bachelor of Management Information Systems degree and plans to continue his research soon.

18. New methods of life expectancy estimation

Poster: [click here]

Nga Thanh NGUYEN

Faculty of Mathematics, Baking Academy, Vietnam
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Ph.D. Nga Thanh NGUYEN is working on her thesis about survival analysis and life expectancy estimation, under the supervisor of Associate Professor Phuc Dang HO. Recently, her research interests focus on problems about life expectancy estimation, i.e Chiang method. She is also a maths lecturer at Banking Academy, Ha Noi. She has presented at several seminars on probability and applied statistics. In addition, she has supported activities of the probability and statistics field at VIASM, such as the Seminar on Applied Statistics.

19. SVM Classifications for Insurance Data Processing

Poster: [click here]

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Irfan Nurhidayat is a Ph.D. student at King Mongkut's Institute of Technology Ladkarabang, Thailand that is interested in insurance research. He is working under Prof. Dr. Busayamas Pimpunchat this moment to construct research abilities in insurance using mathematics tools. His Master's degree is from National Taiwan Normal University, Taiwan in 2019 with a thesis in continuous optimization. More details: https://irfannurhidayat09.wordpress.com/.

20. Asymptotic limit of fast rotation for the incompressible Navier-Stokes equations in a 3D layer

Poster: [click here]

Hiroki OHYAMA

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21. Asymptotic behavior of the Hurwitz-Lerch multiple zeta function at non-positive integer points

Poster: [click here]

Tomokazu ONOZUKA

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Since 2017, I have been a postdoctoral fellow at Kyushu university. In 2016, I worked as a postdoctoral fellow at Toyota technological institute. In 2014, I obtained my PhD degree in mathematics from Nagoya university. I mainly study number theory, especially zeta functions. I am interested in the relation between the Riemann zeta function and multiple zeta functions.

22. Complex symmetry in Fock space

Poster: [click here]

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Pham Viet Hai received his Ph.D degree in Mathematics (2017) from Nanyang Technological University, Singapore and M.S in Mathematics (2010) and B.S degree in Mathematics (2008) from Vietnam National University, Hanoi, Vietnam. He spent time as Research Fellow at the National University of Singapore (2017-2019). His main research interests include operator theory and dynamical systems.

23. Modeling the duration of reaching the risk tipping point in the Covid-19 outbreak: A survival analysis approach

Poster: [click here]

Thi Huong PHAN
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My name is Phan Thi Huong. In March of 2019, I successfully defended my PhD thesis in the Department of Statistical Sciences at University of Padova in Italy. My PhD thesis title is "spatial survival models for analysis of exocytotic events on human beta-cells recorded by TIRF imaging" which was supervised by Prof.ssa Giuliana Cortese . After that, I worked as a post-doctoral researcher at the University of Padova's Department of Information Engineering for about a year. I am currently a lecturer and researcher at the Faculty of Applied Science, Ho Chi Minh City University of Technology - VNUHCM, Vietnam. My research interests are on survival models, particularly in biological applications.

24. Harmonic analysis of quantum Laplacian on quantum Riemannian space

Poster: [click here]

Masafumi SHIMADA
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I am a master course student of Kyushu University. My supervisor is Prof. Hiroyuki Ochiai at IMI- Kyushu University. My research focuses on quantum group theory of noncommutative geometry, especially quantized Laplacian in quantum Riemannian structure.

A short biography: When I was an undergraduate student, in weekly seminars I gave presentations on spherical harmonics, representation theory of Lie group and of Lie

algebra. As an application of these theories, through online seminars and workshops, I launched the project for harmonic analysis of quantum Laplacian.

25. Density estimates for jump diffusion processes

Poster: [click here]

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Ngoc Khue TRAN is a lecturer at Pham Van Dong University. I got my PhD at Université Paris 13 in 2014 under the supervision of Prof. Eulalia Nualart and Prof. Arturo Kohatsu-Higa. I am a postdoctoral researcher at Vietnam Institute for Advanced Study in Mathematics. My research interests include: stochastic analysis, Malliavin calculus and statistical inference for stochastic differential equations with jumps.

26. Risk score of the Covid-19 outbreak in Hanoi: An evaluation at cell and commune levels

Poster: [click here]

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Joint work with
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Binh Thi Thanh DAO, Hanoi University, Vietnam
Quang Minh NGUYEN, Hanoi National University of Education, Vietnam

Dr. Huong Thi TRINH obtained a doctorate in mathematics from The University of Toulouse in France in 2018. She is a lecturer at Thuongmai University and a postdoc

at VIASM. Her research interests focus on applied statistics, applied econometrics, Compositional Data Analysis (CoDa), and non-parametric methods. Her work covers both theoretical models and empirical studies, which have been published in several high-impact journals. Huong has also proactively supported many activities of the probability and statistics field in Vietnam, including conferences and a series of courses, supported by VIASM, on basic and advanced statistics for mathematical lecturers since 2019.

27. Evaluation of Hanoi Policies during Covid-19 lockdown 2021

Poster: [click here]

Binh Thi Thanh DAO
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Joint work with
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DAO Thi Thanh Binh obtained her Doctorate in Finance at University of Paris Dauphine, France in 2005 from where she also received a Master degree in Finance in 2000. She also obtained another Master degree in Economics at EHESS in 2001. Her research is in the field in Default Risk & Modeling, Banking Risks, Corporate Governance, and Securities Valuation. She gives lectures in Corporate Finance, Bank Management, Investment and Portfolio Management, Asset and Liability Management, Statistics and Econometrics in various Bachelor and Master programs.

28. Optimal Food Intake of Pre-weaning Dorper Lamb

Poster: [click here]

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My name is Nurzahirah binti Mohd Yussof and I am currently doing my masters in the program of Master of Science in Applied Mathematics at the Universiti Teknologi MARA, Shah Alam Campus, Selangor, Malaysia.