

The program day by day

Wednesday, December 16

Opening Remarks

09:30 – 09:50

Room : B414 Ewha-Samsung Art Hall

Opening Remarks

Plenary Lectures

Room : B414 Ewha-Samsung Art Hall

10:00 – 10:50

Chair: Georgia Benkart (University of Wisconsin)

10:00 *Counting circles and ergodic theory of Kleinian groups*

Hee Oh, Brown University

[PL-1]

11:00 – 11:50

Chair: Kyewon Koh Park (Ajou University)

11:00 *The proof of the Poincare conjecture*

Terence Tao, UCLA

[PL-2]

Poster Sessions I

13:00 – 14:20

Room : Lobby between B140 and B141

Panel-1

13:30 – 14:20

Room : B142

Title : *The Grant Policies and Strategies of NSF and NRF*

Organizer : In-Suk Wee (Korea University)

Panelists : Peter March(NSF) and Seung Jong Lee(NRF)

Special Sessions

14:30 – 17:40

Code. Session Title	Room, see
SS-01. Geometric Structures and Geometric Group Theory	B224, p.33
SS-04. Modular Forms and Related Topics	B149, p.40
SS-07. Noncommutative Ring Theory	B151, p.45
SS-09. Operator Theory and Operator Algebras	B137, p.49
SS-13. Arithmetic of Quadratic Forms	B152, p.59
SS-17. Algebraic Combinatorics	B153, p.66
SS-20. Operator Theory In Analytic Function Spaces	B134, p.72
SS-24. Knot Theory and Related Topics	B222, p.81
SS-25. Computational Science and Engineering	B136, p.84
SS-28. Differential and Integral Geometry	B225, p.92

Public Lecture

18:00 – 18:50

Room : LG Convention Hall

Title : *From Soap Bubbles to the Poincaré Conjecture*

Lecturer : Prof. Frank Morgan (Williams College)

Thursday, December 17

Special Sessions

08:30 – 10:50

Code.	Session Title	Room, see
SS-01.	Geometric Structures and Geometric Group Theory	B224, p.33
SS-04.	Modular Forms and Related Topics	B149, p.40
SS-06.	Geometry of Varieties, Syzygies and Computations	B150, p.43
SS-07.	Noncommutative Ring Theory	B151, p.45
SS-09.	Operator Theory and Operator Algebras	B137, p.50
SS-11.	Lie Symmetries and Solitons	B221, p.55
SS-12.	Harmonic Analysis and its Applications	B131, p.56
SS-13.	Arithmetic of Quadratic Forms	B152, p.59
SS-17.	Algebraic Combinatorics	B153, p.66
SS-18.	Ergodic Theory and Dynamical Systems	B220, p.68
SS-20.	Operator Theory In Analytic Function Spaces	B134, p.73
SS-23.	Creativity, Giftedness and Talent Development In Mathematics	B138, p.79
SS-24.	Knot Theory and Related Topics	B222, p.81
SS-25.	Computational Science and Engineering	B136, p.84
SS-28.	Differential and Integral Geometry	B225, p.93

Plenary Lectures

Room : B414 Ewha-Samsung Art Hall

11:00 – 11:50 Chair: Yong Seung Cho (Ewha Womans University)

11:00 *Stable quasi-maps to GIT quotients*
 Bumsig Kim, Korea Institute for Advanced Study [PL-3]

 13:30 – 14:20 Chair: Myung-Hwan Kim (Seoul National University)

13:30 *Not quite modular*
 YoungJu Choie, POSTECH [PL-4]

Photo Session

11:50 – 12:00 Place : Gate 9 and Gate 10 of B1, Gate 7 of B2, B4(Base Floor)

Special Sessions

14:30 – 17:40

Code.	Session Title	Room,	see
SS-01.	Geometric Structures and Geometric Group Theory	B224,	p.34
SS-04.	Modular Forms and Related Topics	B149,	p.41
SS-06.	Geometry of Varieties, Syzygies and Computations	B150,	p.43
SS-07.	Noncommutative Ring Theory	B151,	p.46
SS-09.	Operator Theory and Operator Algebras	B137,	p.50
SS-11.	Lie Symmetries and Solitons	B221,	p.55
SS-12.	Harmonic Analysis and its Applications	B131,	p.56
SS-13.	Arithmetic of Quadratic Forms	B152,	p.60
SS-17.	Algebraic Combinatorics	B153,	p.67
SS-18.	Ergodic Theory and Dynamical Systems	B220,	p.68
SS-20.	Operator Theory In Analytic Function Spaces	B134,	p.73
SS-22.	Cryptography	B139,	p.77
SS-23.	Creativity, Giftedness and Talent Development In Mathematics	B138,	p.79
SS-24.	Knot Theory and Related Topics	B222,	p.82
SS-25.	Computational Science and Engineering	B136,	p.85
SS-27.	Mathematical Biology	B132,	p.88
SS-28.	Differential and Integral Geometry	B225,	p.93

Banquet

18:00 – 20:00

Room : B412 Lee Sam-Bong Hall

A complimentary dinner reception is offered to all participants and registered persons.

Friday, December 18

Special Sessions

08:30 – 10:50

Code.	Session Title	Room, see
SS-01.	Geometric Structures and Geometric Group Theory	B224, p.34
SS-02.	Algebraic Geometry	B149, p.35
SS-03.	Nonlinear Elliptic Partial Differential Equations	B144, p.37
SS-06.	Geometry of Varieties, Syzygies and Computations	B150, p.44
SS-08.	Combinatorial Matrix Theory	B151, p.47
SS-09.	Operator Theory and Operator Algebras	B137, p.51
SS-10.	Financial Mathematics	B130, p.53
SS-12.	Harmonic Analysis and its Applications	B131, p.57
SS-14.	Symplectic Geometry and Mirror Symmetry	B221, p.61
SS-15.	Nonlinear Partial Differential Equations and Viscosity Solutions	B143, p.63
SS-17.	Algebraic Combinatorics	B153, p.67
SS-18.	Ergodic Theory and Dynamical Systems	B220, p.69
SS-19.	Inverse Problems and Imaging	B136, p.70
SS-20.	Operator Theory In Analytic Function Spaces	B134, p.74
SS-23.	Creativity, Giftedness and Talent Development In Mathematics	B138, p.80
SS-24.	Knot Theory and Related Topics	B222, p.82
SS-26.	Mathematical Logic and Foundation	B152, p.87
SS-27.	Mathematical Biology	B132, p.89
SS-28.	Differential and Integral Geometry	B225, p.94

Panel-2

11:00 – 12:10

Room : B142

Title : *Challenges and Difficulties for Mathematicians in Asia*

Organizer : Hyungju Park (POSTECH)

Panelists : Presidents of Mathematical Societies in Asia

- Hyungju Park, the chair of the KMS International Exchanges Committee (moderator)
- Wanida Hemakul, the president of the Mathematical Association of Thailand
- Le Tuan Hoa, the president of the Vietnam Mathematical Society
- Nalini Joshi, the president of the Australian Mathematical Society
- Dohan Kim, the president of the Korean Mathematical Society
- Zhi-Ming Ma, the president of the Chinese Mathematical Society
- Fidel R. Nemenzo, the president of the Mathematical Society of the Philippines
- Mohd Salmi Md Noorani, the president of the Malaysian Mathematical Sciences Society
- Chan Roath, the president of the Cambodian Mathematical Society
- Takashi Tsuboi, the president of the Mathematical Society of Japan

Poster Sessions II

11:00 – 12:30

Room : Lobby between B140 and B141

Meeting of KMS

13:30 – 15:00

Room : B142

Contributed Talks

15:00 – 18:10

Code.	Session Title	Room, see
AL.	Algebra	B150, p.97
AN I.	Analysis I	B149, p.98
AN II.	Analysis II	B144, p.100
AN III.	Analysis III	B143, p.102
GE.	Geometry	B143, p.103
TO.	Topology	B143, p.104
AM I.	Applied Mathematics I	B139, p.105
AM II.	Applied Mathematics II	B138, p.106
AM III.	Applied Mathematics III	B137, p.108
IS.	Mathematics for Information Sciences	B137, p.109
PS.	Probability and Statistics	B151, p.110
ME.	Mathematics Education	B151, p.111

Saturday, December 19

Special Sessions

08:30 – 10:50

Code.	Session Title	Room, see
SS-02.	Algebraic Geometry	B149, p.35
SS-03.	Nonlinear Elliptic Partial Differential Equations	B144, p.37
SS-06.	Geometry of Varieties, Syzygies and Computations	B150, p.44
SS-08.	Combinatorial Matrix Theory	B151, p.47
SS-10.	Financial Mathematics	B130, p.54
SS-12.	Harmonic Analysis and its Applications	B131, p.57
SS-14.	Symplectic Geometry and Mirror Symmetry	B221, p.61
SS-16.	Spectral Geometry and Global Analysis	B137, p.65
SS-18.	Ergodic Theory and Dynamical Systems	B220, p.69
SS-19.	Inverse Problems and Imaging	B136, p.70
SS-21.	Mathematical Analysis In Fluid, Gas Dynamics and Related Equations	B138, p.76
SS-22.	Cryptography	B139, p.77
SS-24.	Knot Theory and Related Topics	B222, p.83
SS-26.	Mathematical Logic and Foundation	B152, p.87
SS-27.	Mathematical Biology	B132, p.90
SS-28.	Differential and Integral Geometry	B225, p.95

Plenary Lectures

Room : B414 Ewha-Samsung Art Hall

11:00 – 11:50

Chair: Sijong Kwak (KAIST)

11:00 *Finite generation of the canonical ring*

James McKernan, Massachusetts Institute of Technology

[PL-5]

13:30 – 14:20

Chair: Jeong Han Kim (National Institute for Mathematical Sciences)

13:30 *From the Littlewood-Offord problem to the Circular Law conjecture*

Van Vu, Rutgers University

[PL-6]

Special Sessions

14:30 – 17:40

Code.	Session Title	Room, see
SS-02.	Algebraic Geometry	B149, p.36
SS-03.	Nonlinear Elliptic Partial Differential Equations	B144, p.38
SS-05.	Representation Theory	B150, p.42
SS-08.	Combinatorial Matrix Theory	B151, p.48
SS-12.	Harmonic Analysis and its Applications	B131, p.57
SS-14.	Symplectic Geometry and Mirror Symmetry	B221, p.61
SS-15.	Nonlinear Partial Differential Equations and Viscosity Solutions	B143, p.63
SS-16.	Spectral Geometry and Global Analysis	B137, p.65
SS-19.	Inverse Problems and Imaging	B136, p.71
SS-20.	Operator Theory In Analytic Function Spaces	B134, p.75
SS-21.	Mathematical Analysis In Fluid, Gas Dynamics and Related Equations	B138, p.76
SS-22.	Cryptography	B139, p.78
SS-27.	Mathematical Biology	B132, p.90
SS-28.	Differential and Integral Geometry	B225, p.95

Sunday, December 20

Special Sessions

14:30 – 17:40

Code.	Session Title	Room, see
SS-02.	Algebraic Geometry	B149, p.36
SS-03.	Nonlinear Elliptic Partial Differential Equations	B144, p.38
SS-05.	Representation Theory	B150, p.42
SS-15.	Nonlinear Partial Differential Equations and Viscosity Solutions	B143, p.64

Plenary Lectures

Room : B142

10:40 – 11:30

Chair: Minkyu Kwak (Chonnam National University)

10:40 *Nonlinear elliptic and parabolic equations: Analysis and applications*

Ki-Ahm Lee, Seoul National University

[PL-7]

11:40 – 12:30

Chair: Jae-Hyun Yang (Inha University)

11:40 *Diophantine geometry and Galois theory*

Minhyong Kim, University College London

[PL-8]

2009 Joint Meeting of KMS and AMS
Ewha Womans University
December 16(Wed.)–20(Sun.)

(* : Speaker)

Plenary Lectures

PL. Plenary Lecture

December 16 (Wed.)

Room : B414 Ewha-Samsung Art Hall

10:00 – 10:50

Chair: Georgia Benkart(University of Wisconsin)

10:00 *Counting circles and ergodic theory of Kleinian groups*

Hee Oh, Brown University

[PL-1]

11:00 – 11:50

Chair: Kyewon Koh Park(Ajou University)

11:00 *The proof of the Poincaré conjecture*

Terence Tao, UCLA

[PL-2]

December 17 (Thu.)

Room : B414 Ewha-Samsung Art Hall

11:00 – 11:50

Chair: Yong Seung Cho(Ewha Womans University)

11:00 *Stable quasi-maps to GIT quotients*

Bumsig Kim, Korea Institute for Advanced Study

[PL-3]

13:30 – 14:20

Chair: Myung-Hwan Kim(Seoul National University)

13:30 *Not quite modular*

YoungJu Choie, POSTECH

[PL-4]

December 19 (Thu.) Room : B414 Ewha-Samsung Art Hall

11:00 – 11:50 Chair: Sijong Kwak(KAIST)

11:00 *Finite generation of the canonical ring*
James McKernan, MIT [PL-5]

13:30 – 14:20 Chair: Jeong Han Kim(National Institute for Mathematical Sciences)

13:30 *From the Littlewood-Offord problem to the Circular Law conjecture*
Van Vu, Rutgers University [PL-6]

December 20 (Sun.) Room : B142

10:40 – 11:30 Chair: Minkyu Kwak(Chonnam National University)

10:40 *Nonlinear elliptic and parabolic equations: Analysis and applications*
Ki-Ahm Lee, Seoul National University [PL-7]

11:40 – 12:30 Chair: Jae-Hyun Yang(Inha University)

11:40 *Diophantine geometry and Galois theory*
Minhyong Kim, University College London [PL-8]

09:40 *Projective deformations of 3-dimensional hyperbolic Coxeter orbifolds*
Suhyoung Choi, KAIST,
Craig D. Hodgson, The University of Melbourne,
Gye-Seon Lee*, KAIST [SS-01-9]

10:10 *Bilipschitz equivalence is not equivalent to quasi-isometric equivalence for finitely generated groups*
Tullia Dymarz, Yale University [SS-01-10]

December 17 (Thu.) Room : B224

14:30 – 17:40 Chair: In Kang Kim(Korea Institute for Advanced Study)

14:30 *Amenable actions and amalgamated free product of two free groups over a cyclic subgroup*
Soyoung Moon, University of Neuchatel [SS-01-11]

15:20 *Current twisting and nonsingular matrices*
Alexandra Pettet*, University of Michigan,
Matt Clay, Allegheny College [SS-01-12]

16:10 *Normal forms for conformal vector fields*
Karin Melnick, University of Maryland, College Park [SS-01-13]

17:00 *The Howe-Moore property and affine isometric actions on Hilbert spaces*
Alain Valette, Universite de Neuchatel [SS-01-14]

December 18 (Fri.) Room : B224

08:50 – 10:50 Chair: Seonhee Lim(Cornell University/Seoul National University)

08:50 *Classification of orderable and deformable compact Coxeter polyhedra in hyperbolic space*
Dhrubajit Choudhury*, KAIST,
Suhyoung Choi, KAIST,
Gye-Seon Lee, KAIST [SS-01-15]

09:20 *Gromov's conjecture on doubles of free groups*
Sang-Hyun Kim, The University of Texas at Austin [SS-01-16]

10:10 *A version of Morita's non-lifting theorem*
Juan Souto, University of Michigan [SS-01-17]

10:30 *Noncoherence of rank 1 arithmetic groups*
Michael Kapovich, University of California, Davis [SS-01-18]

SS-02. Algebraic Geometry

December 18 (Fri.)

Room : B149

08:30 – 10:50

Chair: Yongnam Lee(Sogang University)

08:30 *A quotient of a minimal surface of general type with $p_g = q = 0$ having an involution*
 YongJoo Shin*, Sogang University,
 Yongnam Lee, Sogang University [SS-02-1]

08:50 *Log canonical thresholds on del Pezzo surfaces of degree > 1*
 Joonyeong Won, POSTECH [SS-02-2]

09:20 *A construction of surfaces of general type with $p_g = 1$ and $q = 0$*
 Heesang Park*, Seoul National University,
 Jongil Park, Seoul National University,
 Dongsoo Shin, Chungnam National University [SS-02-3]

09:40 *On GIT constructions of Kontsevich moduli spaces of stable maps*
 Young-Hoon Kiem, Seoul National University,
 Han-Bom Moon*, Seoul National University [SS-02-4]

10:10 *Factorial threefolds with simple double points*
 Kyusik Hong*, Seoul National University,
 Jihun Park, POSTECH [SS-02-5]

10:30 *GIT quotient of canonical genus 4 curves*
 Hosung Kim, Sogang University [SS-02-6]

 December 19 (Sat.)

Room : B149

09:20 – 10:50

Chair: Donghoon Hyeon(POSTECH)

09:20 *Birational geometry of moduli space of genus 4 curves*
 Sebastian Casalaina-Martin, University of Colorado,
 Radu Laza*, Stony Brook University [SS-02-7]

10:10 *Moduli spaces of rational curves in projective space*
 Young-Hoon Kiem, Seoul National University [SS-02-8]

December 19 (Sat.)

Room : B149

- 14:30 – 16:50 Chair: James McKernan(MIT)
- 14:30 *Hilbert schemes of points*
Kyungyong Lee, Purdue University [SS-02-9]
- 15:20 *A lifting theorem in the minimal model program*
Paolo Cascini, Imperial College [SS-02-10]
- 16:10 *Log canonical thresholds on Fano varieties*
Jihun Park, POSTECH [SS-02-11]

December 20 (Sun.)

Room : B149

- 08:40 – 10:30 Chair: Ian Morrison(Fordham University)
- 08:40 *Splitting criteria for vector bundles on higher dimensional varieties*
Parsa Bakhtary, King Fahd University of Petroleum & Minerals [SS-02-12]
- 09:00 *Mori's program for Kontsevich moduli spaces of stable maps*
Dawei Chen*, University of Illinois, Chicago,
Izzet Coskun, University of Illinois, Chicago [SS-02-13]
- 09:50 *Modular compactifications of $M_{g,n}$*
David Smyth, Harvard University [SS-02-14]

SS-03. Nonlinear Elliptic Partial Differential Equations

December 18 (Fri.)

Room : B144

- 08:30 – 10:50 Chair: Zhi-Qiang Wang(Utah State University)
- 08:30 *Heat method in the elliptic variational problems*
Kung-Ching Chang, Peking University [SS-03-1]
- 09:20 *Positive entire solutions of inhomogeneous semilinear elliptic equations*
Soohyun Bae, Hanbat National University [SS-03-2]
- 09:40 *Existence of positive solutions of Hénon equations*
Norimichi Hirano, Yokohama National University [SS-03-3]
- 10:10 *A Pohozaev type identity*
Florin Catrina, St. John's University [SS-03-4]
- 10:30 *Positive solutions for classes of infinite semipositone systems*
Eun Kyoung Lee*, Pusan National University,
R. Shivaji, Mississippi State University,
Jinglong Ye, Mississippi State University [SS-03-5]

December 19 (Sat.)

Room : B144

- 08:30 – 10:50 Chair: Kung-Ching Chang(Peking University)
- 08:30 *Sharp constants and minimizers for a class of Caffarelli-Kohn-Nirenberg inequalities*
Florin Catrina, St. John's University,
David G. Costa*, University of Nevada Las Vegas [SS-03-6]
- 08:50 *Nonlinear elliptic systems and stability*
Daniele Garrisi, POSTECH [SS-03-7]
- 09:20 *Multiplicity of solutions for a noncooperative elliptic system*
Yongqing Li, Fujian Normal University [SS-03-8]
- 09:40 *On a nonlinear stationary Schrödinger equation*
C. A. Stuart, IACS-EPFL, CH-1015 Lausanne, Switzerland,
Z. P. Wang, Chinese Academy of Sciences,
Huan-Song Zhou*, Chinese Academy of Sciences [SS-03-9]
- 10:10 *A multiplicity result for a class of infinite positone problems*
Eunkyung Ko*, Mississippi State University,
Eun Kyoung Lee, Pusan National University,
R. Shivaji, Mississippi State University [SS-03-10]

10:30 *Variational approach to bifurcation from infinity for nonlinear elliptic problems*
 Youngae Lee, POSTECH [SS-03-11]

December 19 (Sat.) Room : B144

14:30 – 17:20 Chair: David G. Costa(University of Nevada Las Vegas)

14:30 *Bifurcations for one-dim p -Laplacian problems with singular weights*
 Yong-Hoon Lee, Pusan National University [SS-03-12]

14:50 *Finding multiple solutions to elliptic PDE with nonlinear boundary conditions on interior/exterior domains*
 Jianxin Zhou, Texas A& M University [SS-03-13]

15:20 *Quantization effects for Maxwell-Chern-Simons vortices*
 Jongmin Han, Hankuk University of Foreign Studies [SS-03-14]

15:40 *Variational problems with linear growth in dimension 1*
 Meiyue Jiang, Peking University [SS-03-15]

16:10 *An existence theorem for piecewise-orthotropic pressurized membranes*
 Jieun Lee, The George Washington University [SS-03-16]

16:30 *A rigorous derivation of mean-field models for diblock copolymer melts*
 Yoshihito Oshita, Okayama University [SS-03-17]

17:00 *Existence of solution concentrating on higher dimensional subsets for nonlinear Schrödinger equations*
 Jaeyoung Byeon, POSTECH,
 Ohsang Kwon*, POSTECH,
 Yoshihito Oshita, Okayama University [SS-03-18]

December 20 (Sun.) Room : B144

08:30 – 10:00 Chair: Jaeyoung Byeon(POSTECH)

08:30 *Weighted Sobolev embeddings and radial solutions of quasilinear elliptic equations*
 Jiabao Su, Capital Normal University [SS-03-19]

08:50 *Uniqueness of positive radial solutions of $\Delta u + f(u) = 0$ in R^N , $N \geq 2$*
 Jaeduck Jang, Hankuk University of Foreign Studies [SS-03-20]

09:20 *Multivortex solutions for the self-dual Chern-Simons-Higgs model*
 Kwangseok Choe, Inha University [SS-03-21]

09:40 *Bifurcation results for a nonlinear Schrödinger system*
Zhi-Qiang Wang, Utah State University

[SS-03-22]

SS-04. Modular Forms and Related Topics

December 16 (Wed.) Room : B149

- 14:30 – 17:40 Chair: Winnie Li(Penn State University, USA and NCTS, Taiwan)
- 14:30 *On Galois representations with quaternion multiplication*
 Ling Long, Iowa State University [SS-04-1]
- 14:55 *Atkin and Swinnerton-Dyer congruences for noncongruence modular forms of weight 2*
 Jonas Kibelbek, Penn State University [SS-04-2]
- 15:30 *Extensions of rank one (ϕ, Γ) -modules and crystalline representations*
 Seunghwan Chang*, POSTECH,
 Fred Diamond, King's College London [SS-04-3]
- 15:55 *On automorphic forms of Drinfeld type*
 Fu-Tsun Wei, National Tsing-Hua University [SS-04-4]
- 16:30 *Iwasawa main conjecture for CM fields and p -adic modular forms on $U(3)$*
 Ming-Lun Hsieh, National Taiwan University [SS-04-5]
- 16:55 *Strong spectral gaps for compact quotients of products of $\mathrm{PSL}(2, \mathbb{R})$*
 Dubi Kelmer*, University of Chicago,
 Peter Sarnak, Princeton University [SS-04-6]
- 17:20 *Finiteness of endomorphism rings of abelian varieties*
 Chia-Fu Yu, Academia Sinica [SS-04-7]

December 17 (Thu.) Room : B149

- 08:30 – 10:50 Chair: Ja Kyung Koo(KAIST)
- 08:30 *Ray class fields generated by torsion points of certain elliptic curves*
 Ja Kyung Koo, KAIST,
 Dong Hwa Shin, KAIST,
 Dong Sung Yoon*, KAIST [SS-04-8]
- 08:55 *Ring class invariants over imaginary quadratic fields*
 Ick Sun Eum*, KAIST,
 Ja Kyung Koo, KAIST,
 Dong Hwa Shin, KAIST [SS-04-9]

- 09:30 *Normal bases of class fields over imaginary quadratic fields*
 Ho Yun Jung, KAIST,
 Ja Kyung Koo, KAIST,
 Dong Hwa Shin*, KAIST [SS-04-10]
- 09:55 *Conic theta functions and what they say about polytopes*
 Sinai Robins, Nanyang Technological University [SS-04-11]
- 10:30 *The behavior of Hecke L-function of real quadratic fields at $s = 0$*
 Jungyun Lee, KAIST [SS-04-12]

December 17 (Thu.)

Room : B149

- 14:30 – 17:40 Chair: Yunseo Choi(Korea Institute for Advanced Study)
- 14:30 *Kac-Wakimoto characters and universal mock theta functions*
 Amanda Folsom, University of Wisconsin [SS-04-13]
- 14:55 *Zagier duality and vector valued modular forms*
 Bumkyu Cho*, POSTECH,
 YoungJu Choie, POSTECH [SS-04-14]
- 15:30 *Integrality of Fourier coefficients of vector-valued modular forms*
 Christopher Marks, University of California, Santa Cruz [SS-04-15]
- 15:55 *Heat operators and Mock Jacobi forms*
 Subong Lim*, POSTECH,
 YoungJu Choie, POSTECH [SS-04-16]
- 16:30 *Non-vanishing of central values of modular L-functions modulo l*
 Dohoon Choi, Korea Aerospace University [SS-04-17]
- 16:55 *Trilinear forms and subconvexity of the triple product L-function*
 Michael Woodbury, University of Wisconsin [SS-04-18]
- 17:20 *Congruences of the partition function*
 Yifan Yang, National Chiao Tung University [SS-04-19]

SS-05. Representation Theory

December 19 (Sat.) Room : B150

14:30 – 16:00 Chair: Jae-Hoon Kwon(University of Seoul)

14:30 *Motzkin algebras and representations*
 Georgia Benkart*, University of Wisconsin,
 Tom Halverson, Macalester College [SS-05-1]

15:20 *Lie bialgebras and Poisson Hopf algebras*
 Sei-Qwon Oh, Chungnam National University [SS-05-2]

15:40 *Graph algebras and free vertex algebras*
 Namhoon Kim, Hongik University [SS-05-3]

 16:10 – 17:40 Chair: Kyu-Hwan Lee(University of Connecticut)

16:10 *A semisimple category for quantum Borcherds superalgebras*
 Kyeonghoon Jeong, Seoul National University,
 Dong-il Lee*, Seoul Women's University [SS-05-4]

16:30 *Orbit-counting polynomials and their generalization*
 Young-Tak Oh, Sogang University [SS-05-5]

17:00 *Generalized Casselman-Shalika formula*
 Julee Kim, MIT [SS-05-6]

December 20 (Sun.) Room : B150

08:30 – 10:30 Chair: Young-Tak Oh(Sogang University)

08:30 *Highest weight modules over quantum queer superalgebra $U_q(q(n))$*
 Myungho Kim, Seoul National University [SS-05-7]

08:50 *Weyl group multiple Dirichlet series for Kac-Moody root systems*
 Kyu-Hwan Lee, University of Connecticut [SS-05-8]

09:20 *A gerbal representation of $SU(2)$*
 Hyun Kyu Kim, Yale University [SS-05-9]

10:10 *On extremal weight crystals for the quantum group $U_q(gl_\infty)$*
 Jae-Hoon Kwon, University of Seoul [SS-05-10]

SS-06. Geometry of Varieties, Syzygies and Computations

December 17 (Thu.)

Room : B150

09:00 – 11:00

Chair: Sijong Kwak(KAIST)

09:00 *The Gotzmann coefficients of Hilbert functions and its applications*
 Yong-Su Shin, Sungshin Women's University [SS-06-1]

09:50 *Computing algebraic invariants of fat points via reduction*
 Susan Cooper*, University of Nebraska,
 Brian Harbourne, University of Nebraska,
 Zach Teitler, Texas A & M University [SS-06-2]

10:20 *Linear series on ribbons*
 Dawei Chen, University of Illinois, Chicago [SS-06-3]

December 17 (Thu.)

Room : B150

14:30 – 17:50

Chair: Jerzy Weyman(Northeastern University)

14:30 *Computing the resurgence of homogeneous ideals in polynomial rings*
 Brian Harbourne, University of Nebraska [SS-06-4]

15:20 *Points in a complete intersection and its application*
 Youngho Woo, Korea Institute for Advanced Study [SS-06-5]

15:50 *μ -basis of rational space curves of type $(1, 1, d - 2)$ and minimal generators for the associated Rees algebra*
 J. William Hoffman, Louisiana State University,
 Haohao Wang*, Southeast Missouri State University,
 Ron Goldman, Rice University,
 Xiaohong Jia, University of Hong Kong [SS-06-6]

16:20 *On the number of rational points on a plane curve with a conjecture of Sziklai*
 Masaaki Homma, Kanagawa University,
 Seon Jeong Kim*, Gyeongsang National University [SS-06-7]

17:10 *Lex ideals without maximal Betti numbers*
 Jeff Mermin*, Oklahoma State University,
 Satoshi Murai, Kyoto University [SS-06-8]

17:30 *Syzygies of section modules*
 Youngook Choi*, Yeoungnam University,
 Pyung-Lyun Kang, Chungnam National University,
 Sijong Kwak, KAIST [SS-06-9]

December 18 (Fri.)

Room : B150

- 09:00 – 10:50 Chair: Brian Harbourne(University of Nebraska, Lincoln)
- 09:00 *Neighbor joining with distance based subtree weights of quartets and phylogenetic invariants*
 Young Rock Kim, Hankuk University of Foreign Studies [SS-06-10]
- 09:30 *On syzygies of a non-linearly normal k -gonal curve*
 Wanseok Lee*, KAIST,
 Park Euisung, Korea University [SS-06-11]
- 10:00 *An invariant of matroids and syzygies of multigraded modules*
 Alexandre Tchernev, University at Albany, SUNY [SS-06-12]
- 10:30 *Analysis on some infinite modules, inner projection and applications*
 Kangjin Han*, KAIST,
 Sijong Kwak, KAIST [SS-06-13]

December 19 (Sat.)

Room : B150

- 09:00 – 10:40 Chair: Young Rock Kim(Hankuk University of Foreign Studies)
- 09:00 *The Poncelet relation and vector bundles on a smooth quadric surface*
 Sukmoon Huh, Korea Institute for Advanced Study [SS-06-14]
- 09:30 *Structure of projective varieties with non-birational linear projections and its applications to syzygy problems*
 Atsushi Noma, Yokohama National University [SS-06-15]
- 10:00 *Towards equivariant Boij-Soderberg theory*
 Jerzy Weyman*, Northeastern University,
 Steven Sam, MIT [SS-06-16]

09:40 *Skew polynomial rings over semiprime rings*
Nam-Kyun Kim*, Hanbat National University,
Chan-Yong Hong, Kyung Hee University,
Yang Lee, Pusan National University [SS-07-10]

10:00 *Strongly clean triangular matrix rings, preliminary report*
Alexander Diesl*, Wellesley College,
Wolf Iberkleid, Nova Southeastern University,
Ramiro Lafuente-Rodriguez, Universidad Mayor de San Andres,
Warren McGovern, Bowling Green State University [SS-07-11]

December 17 (Thu.)

Room : B151

14:30 – 16:40 Chair: Yang Lee(Pusan National University)

14:30 *Weakly regular and self-injective Leavitt path algebras*
Gonzalo Aranda Pino*, University of Malaga,
Kulumani Rangaswamy, University of Colorado at Colorado Springs,
Mercedes Siles Molina, University of Malaga [SS-07-12]

15:10 *Structure of minimal noncommutative reversible rings and minimal noncommutative reflexive rings*
Byung-Ok Kim, Korea Science Academy of KAIST [SS-07-13]

15:40 *A condition close to the insertion-of-factors-property*
Hong Kee Kim*, Gyeongsang National University,
Nam Kyun Kim, Hanbat National University,
Yang Lee, Pusan National University [SS-07-14]

16:00 *Trivial extensions, preprojective algebras, and AS-Gorenstein algebras*
Izuru Mori, Shizuoka University [SS-07-15]

16:50 – 17:40 Chair: Hong Kee Kim(Gyeongsang National University)

16:50 *Commuting and trivializing probability in finite rings*
Martin Juras, Qatar University [SS-07-16]

17:20 *On reflexive property of rings*
Yang Lee, Pusan National University [SS-07-17]

SS-08. Combinatorial Matrix Theory

December 18 (Fri.)

Room : B151

08:30 – 10:50 Chair: Suk-Geun Hwang(Kyungpook National University)

08:30 *Totally nonnegative (0,1)-matrices*
 Richard A. Brualdi*, University of Wisconsin,
 Steve Kirkland, Hamilton Institute, Ireland and University of Regina [SS-08-1]

09:00 *The rules of divisibility for matrices*
 Ivo Herzog, Ohio State University at Lima [SS-08-2]

09:30 *Characterizations of term-rank preservers*
 Seok-Zun Song*, Jeju National University,
 Kyung-Tae Kang, Jeju National University [SS-08-3]

10:00 *Infinite families of recursive formulas generating power moments of ternary Kloosterman sums with square arguments associated with $o^-(2n, q)$*
 Dae San Kim, Sogang University [SS-08-4]

10:30 *Simultaneous Lyapunov-Sylvester equations for matrices*
 Quoc-Phong Vu, Ohio University [SS-08-5]

December 19 (Sat.)

Room : B151

08:30 – 10:50 Chair: Bryan Shader(University of Wyoming)

08:30 *On graphs with smallest eigenvalue -3*
 Jack Koolen, POSTECH [SS-08-6]

09:00 *Eigenvalues and connectivity of regular graphs*
 Sebastian M. Cioaba, University of Delaware [SS-08-7]

09:30 *On the largest eigenvalues of bipartite graphs which are nearly complete*
 In-Jae Kim, Minnesota State University, Mankato [SS-08-8]

10:00 *On conjectures involving Laplacian eigenvalues and signless Laplacian eigenvalues of graphs*
 Kinkar Ch. Das, Sungkyunkwan University [SS-08-9]

10:30 *A generalization of Temperley's tree-number formula and applications in networks*
 Woong Kook, University of Rhode Island [SS-08-10]

December 19 (Sat.)

Room : B151

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- 14:30 – 17:40 Chair: Richard A. Brualdi(University of Wisconsin)
- 14:30 *Minimum rank of skew-symmetric matrices described by a graph*
Bryan Shader, University of Wyoming [SS-08-11]
- 15:00 *A structure of Riordan matrices*
Gi-Sang Cheon, Sungkyunkwan University [SS-08-12]
- 15:30 *Hadamard equivalence on binary matrices - new combinatoral problem*
Ki-Hyeon Park, Yonsei University,
Hong-Yeop Song*, Yonsei University [SS-08-13]
- 16:00 *Perfect matchings in claw-free cubic graphs*
Sang-il Oum, KAIST [SS-08-14]
- 16:30 *The hitting time subgroup, Łukasiewicz paths and Faber polynomials*
Hana Kim, Sungkyunkwan University [SS-08-15]
- 16:55 *Comparing Zagreb indices for connected graphs*
Batmend Horoldagva*, Sungkyunkwan University,
Sang-Gu Lee, Sungkyunkwan University [SS-08-16]
- 17:20 *Fibonacci sequences and the winning conditions for the blackout game*
Sang-Gu Lee*, Sungkyunkwan University,
Duk-Sun Kim, Sungkyunkwan University [SS-08-17]

SS-09. Operator Theory and Operator Algebras

December 16 (Wed.)

Room : B137

14:30 – 15:10 Chair: Sa Ge Lee(Seoul National University)

14:30 *Hyponormality and subnormality of block Toeplitz operators*
Woo Young Lee, Seoul National University [SS-09-1]

15:20 – 16:00 Chair: Jeong Hee Hong(Korea Maritime University)

15:20 *A variational principle for actions of sofic groups*
David Kerr, Texas A&M University [SS-09-2]

15:40 *Discrete groups of intermediate rank*
Pichot Mikael, University of Tokyo [SS-09-3]

16:10 – 16:50 Chair: Young oh Yang(Jeju National University)

16:10 *Functional equations and applications*
Choonkil Park, Hanyang University [SS-09-4]

16:30 *Similarity of operators via function theory and complex geometry*
Hyun-Kyoung Kwon, Ewha Womans University [SS-09-5]

17:00 – 18:00 Chair: In Sung Hwang(Sungkyunkwan University)

17:00 *A note on truncated complex moment problem*
Chunji Li, Northeastern University [SS-09-6]

17:20 *Examples of group actions which are W^*E -superrigid*
Jesse Peterson, Vanderbilt University [SS-09-7]

17:40 *The Yang-Mills functional and Laplace's equation on quantum Heisenberg manifolds*
Sooran Kang, University of Colorado at Boulder [SS-09-8]

December 17 (Thu.)

Room : B137

- 08:30 – 09:10 Chair: Sun Young Jang(University of Ulsan)
- 08:30 *Structure of homeomorphism C^* -algebras for arbitrary topological dynamical systems*
 Jun Tomiyama, Tokyo Metropolitan University [SS-09-9]
- 08:50 *Endomorphisms of the Cuntz algebras which preserve the canonical diagonal MASA*
 Jeong Hee Hong, Korea Maritime University [SS-09-10]

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- 09:20 – 10:00 Chair: G. Exner(Bucknell University)
- 09:20 *Subnormality of arbitrary powers of 2-variable weighted shifts*
 Sang Hoon Lee*, Chungnam National University,
 Raul Curto, University of Iowa,
 Jasang Yoon, University of Texas-Pan American [SS-09-11]
- 09:40 *Dynamics and potential*
 Huzihiro Araki, Kyoto University [SS-09-12]

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- 10:10 – 10:50 Chair: H. Osaka(Ritsumeikan University)
- 10:10 *Noncommutative L_p -space and operator system*
 Kyung Hoon Han, Seoul National University [SS-09-13]
- 10:30 *Some remarks on extremally rich C^* -algebras*
 Hyun Ho Lee, Seoul National University [SS-09-14]

December 17 (Thu.)

Room : B137

- 14:30 – 15:10 Chair: J. Tomiyama(Tokyo Metropolitan University)
- 14:30 *The structure of crossed products by free minimal actions of \mathbb{Z}^d*
 N. Christopher Phillips, University of Oregon [SS-09-15]

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- 15:20 – 16:00 Chair: K. Dykema(Texas A & M University)
- 15:20 *Eigenvalue results for large scale random Vandermonde matrices with unit complex entries*
 Gabriel H. Tucci*, Bell Laboratories,
 Phil Whiting, Bell Laboratories [SS-09-16]

15:40 *Orbital free entropy dimension and its applications*
 Yoshimichi Ueda, Kyushu University [SS-09-17]

 16:10 – 16:50 Chair: Eungil Ko(Ewha Womans University)

16:10 *Whither n -contractivity and n -hypercontractivity?*
 George Exner, Bucknell University [SS-09-18]

16:30 *Topological free entropy dimension for unital MF algebras*
 Junhao Shen, University of New Hampshire [SS-09-19]

 17:00 – 17:40 Chair: W. Szymanski(University of Southern Denmark)

17:00 *Local properties for C^* -algebras and the Rokhlin property*
 Hiroyuki Osaka, Ritsumeikan University [SS-09-20]

17:20 *Hypercontractivity on the q -Araki-Woods algebras: a restricted case*
 Hun Hee Lee, Chungbuk National University [SS-09-21]

December 18 (Fri.) Room : B137

08:30 – 09:10 Chair: Seung-Hyeok Kye(Seoul National University)

08:30 *Superconformal field theory, operator algebras and noncommutative geometry*
 Yasuyuki Kawahigashi, University of Tokyo [SS-09-22]

 09:20 – 10:00 Chair: B. J. Kahng(Canisius College)

09:20 *Localized endomorphisms of the Cuntz algebras*
 Wojciech Szymański, University of Southern Denmark [SS-09-23]

09:40 *On the Property (gb)*
 Il Ju An, Kyung Hee University,
 Young Min Han*, Kyung Hee University [SS-09-24]

 10:10 – 10:50 Chair: Woo Young Lee(Seoul National University)

10:10 *Generalized Fourier transform and duality in the locally compact quantum group setting*
 Byung-Jay Kahng, Canisius College [SS-09-25]

10:30 *On the BMV conjecture*

Benoit Collins, University of Ottawa,
Ken Dykema*, Texas A & M University,
Francisco Torres-Ayala, Texas A & M University

[SS-09-26]

SS-10. Financial Mathematics

December 18 (Fri.)

Room : B130

- 08:30 – 09:10 Chair: Hye Jin Ku(New York University)
- 08:30 *Infinite horizon optimal search problem with hiring and firing options*
Mingxin Xu, University of North Carolina at Charlotte [SS-10-1]
- 08:50 *Self-enforced investment with regime switching*
Hoon Cho, KAIST,
Yong Hyun Shin*, Korea Institute for Advanced Study [SS-10-2]

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- 09:20 – 10:00 Chair: Hye Jin Ku(New York University)
- 09:20 *Managing risk with short term futures*
Zhijian Wu*, The University of Alabama,
Chunhui Yu, The University of Alabama,
Xiaohua Zheng, The University of Alabama [SS-10-3]
- 09:40 *An analytic valuation method for multivariate contingent claims with regime-switching volatilities*
Bong-Gyu Jang*, POSTECH,
Kum-Whan Roh, Mirae Asset Security Company,
Ji Hee Yoon, KAIST [SS-10-4]

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- 10:10 – 10:50 Chair: Hyeonggeon Ku(Ajou University)
- 10:10 *Analysis of Riccati differential equations and application to option pricing*
Kyoung-Kuk Kim, KAIST [SS-10-5]
- 10:30 *Firm size growth effect on the risk-taking behavior: BSDE approaches*
Kyoung Jin Choi, Washington University,
Byung Hwa Lim*, KAIST,
Yong Hyun Shin, Korea Institute for Advanced Study [SS-10-6]

December 19 (Sat.)

Room : B130

- 08:30 – 09:10 Chair: Hyeonggeon Ku(Ajou University)
- 08:30 *Interest rate risk premium and equity valuation*
Zhuang Kang, University of Cincinnati,
Srdjan Stojanovic*, University of Cincinnati [SS-10-7]

08:50 *Hierarchical contract and collusion*
Hyeng Keun Koo, Ajou University,
Gyoocheol Shim*, Ajou University,
Jaeyoung Sung, Ajou University [SS-10-8]

09:20 – 10:00 Chair: Giseop Lee(University of Liousville)

09:20 *Volatility analysis for high frequency financial data*
Zhijian Wu, The University of Alabama,
Chunhui Yu, The University of Alabama,
Xiaohua Zheng*, The University of Alabama [SS-10-9]

09:40 *Matching asymptotics in lookback and barrier options*
Sang-Hyeon Park, Yonsei University [SS-10-10]

10:10 – 10:50 Chair: Giseop Lee(University of Liousville)

10:10 *Generating low-discrepancy sequences from the normal distribution: Box-Muller or inverse transform?*
Giray Okten, Florida State University,
Ahmet Goncu*, Shandong University [SS-10-11]

10:30 *Pricing for CEV Model with stochastic volatility*
S.-Y. Choi*, Yonsei University,
J.-P. Fouque, UCSB,
J.-H. Kim, Yonsei University [SS-10-12]

SS-11. Lie Symmetries and Solitons

December 17 (Thu.)

Room : B221

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- 10:00 – 11:00 Chair: Chaudry Masood Khalique(North-West University)
- 10:00 *New travelling wave solutions for the nonlinear problems*
 Bongsoo Jang, Ulsan National Institute of Science and Tech. [SS-11-1]
- 10:30 *Optical soliton perturbation by He's variational principle*
 Anjan Biswas, Delaware State University [SS-11-2]

December 17 (Thu.)

Room : B221

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- 14:30 – 17:30 Chair: Anjan Biswas(Delaware State University)
- 14:30 *First integrals for a generalized coupled Lane-Emden system*
 Chaudry Masood Khalique, North-West University [SS-11-3]
- 15:00 *Group classification of the generalized Emden-Fowler-type equation*
 Basetsana Ntsime, UNIVEN [SS-11-4]
- 15:30 *Invariant criteria for linearizability of all classes of systems of two ordinary differential equations*
 Sajid Ali, National University of Sciences and Technology,
 Asghar Qadir*, National University of Sciences and Technology,
 M. Safdar, National University of Sciences and Technology [SS-11-5]
- 16:00 *Solitary waves in a non-Kerr media with competing nonlinearity*
 Amarendra K. Sarma, Indian Institute of Technology Guwahati,
 Manirupa Saha, Indian Institute of Technology Guwahati,
 Anjan Biswas*, Center for Research and Education in Optical Sciences and Applications [SS-11-6]
- 16:30 *Lie symmetries and solitons*
 Daniela Milovic, University of Nis [SS-11-7]
- 17:00 *Optical soliton cooling with saturable law nonlinearity*
 Fayequa Majid, Alabama A & M University [SS-11-8]

SS-12. Harmonic Analysis and its Applications

December 17 (Thu.)

Room : B131

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- 09:00 – 10:35 Chair: Sunggeum Hong(Chosun University)
- 09:00 *Optimal polynomial return times*
Neil Lyall*, University of Georgia,
Akos Magyar, University of British Columbia [SS-12-1]
- 09:50 *Decay estimate on solutions of dispersion managed non-linear Schrödinger equation*
Burak Erdoğan, University of Illinois at Urbana-Champaign,
Dirk Hundertmark, University of Illinois at Urbana-Champaign,
Young-Ran Lee*, Sogang University [SS-12-2]
- 10:15 *Nikodym maximal function associated with variable planes*
Joonil Kim, Yonsei University [SS-12-3]

December 17 (Thu.)

Room : B131

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- 14:30 – 17:20 Chair: Chan Woo Yang(Korea University)
- 14:30 *On the mass-critical generalized KdV equation*
Rowan Killip, UCLA,
Soonsik Kwon*, Princeton University,
Shuanglin Shao, Institute for Mathematics and Its applications,
Monica Visan, UCLA [SS-12-4]
- 15:20 *Triple junction in the axis symmetric domain for Laplace equation*
Hijun Choe, Yonsei University [SS-12-5]
- 16:10 *On a well-posedness of nonlinear Schrödinger equation with a Hartree type nonlinearity with derivative*
Yonggeun Cho, Chonbuk National University [SS-12-6]
- 16:35 *Mixed boundary value problem of the Laplace equation*
TongKeun Chang, Korea Institute for Advanced Study [SS-12-7]
- 17:00 *Estimates for Riesz means associated with some polyhedron*
Sunggeum Hong, Chosun University [SS-12-8]

December 18 (Fri.)

Room : B131

08:50 – 10:50

Chair: Jong Guk Bak(POSTECH)

08:50 *Uniform distribution, Fourier analysis, finite point configuration and distribution of lattice points on convex surfaces*

Alex Iosevich, University of Missouri

[SS-12-9]

09:40 *Sharp L^p estimates for non-localized oscillatory integral operators*

Chan Woo Yang, Korea University

[SS-12-10]

10:05 *Carleman-type estimates and unique continuation*

Ihyeok Seo, Seoul National University

[SS-12-11]

10:30 *Estimates for oscillatory strongly singular integral operators in \mathbb{R}^d*

Youngcha Suh, Korea University

[SS-12-12]

December 19 (Sat.)

Room : B131

09:10 – 10:45

Chair: Yong Kum Cho(Chung-Ang University)

09:10 *The energy-supercritical nonlinear wave equation*

Monica Visan, University of California

[SS-12-13]

10:00 *Endpoint estimates for bilinear oscillatory integral operators related to restriction to the cone*

Jungjin Lee, Korea Institute for Advanced Study

[SS-12-14]

10:25 *Mass concentration for the L^2 -critical nonlinear Schrödinger equations of higher orders*

Myeongju Chae, Hankyong National University

[SS-12-15]

December 19 (Sat.)

Room : B131

14:30 – 17:20

Chair: Joonil Kim(Yeonsei University)

14:30 *An inequality for spherical means, with applications*

Andreas Seeger, University of Wisconsin

[SS-12-16]

15:20 *Restriction of Fourier transforms to curves*Jong-Guk Bak*, POSTECH,
Daniel Oberlin, Florida State University,
Andreas Seeger, University of Wisconsin

[SS-12-17]

- 16:10 *An endpoint estimate for the cone multiplier*
Yaryong Heo*, Pohang Mathematics Institute,
Sunggeum Hong, Chosun University,
Chan Woo Yang, Korea University [SS-12-18]
- 16:35 *Existence for 3D Euler equations in critical Sobolev spaces*
Namkwon Kim, Chosun University [SS-12-19]
- 17:00 *Inhomogeneous Strichartz estimates for the Schrödinger equation*
Youngwoo Koh, POSTECH [SS-12-20]

SS-13. Arithmetic of Quadratic Forms

December 16 (Wed.)

Room : B152

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- 14:30 – 17:45 Chair: Myung-Hwan Kim(Seoul National University)
- 14:30 *Formal power series of Rankin-Selberg type related to Siegel series and its application to Siegel modular forms*
Hidenori Katsurada, Muroran Institute of Technology [SS-13-1]
- 14:55 *Interplay between Siegel modular forms and quadratic forms*
Lynne Walling, University of Bristol [SS-13-2]
- 15:30 *Spherical functions and (hermitian) Siegel series*
Yumiko Hironaka, Waseda University [SS-13-3]
- 15:55 *The Kloosterman problem for Hermitian lattices*
Byeong Moon Kim, Kangnung-Wonju National University,
Ji Young Kim*, Korea Institute for Advanced Study,
Poo-Sung Park, Kyungnam University [SS-13-4]
- 16:30 *On the gaps between values of binary quadratic forms*
Rainer Dietmann*, Royal Holloway, University of London,
Jörg Brüdern, Universität Stuttgart [SS-13-5]
- 16:55 *A problem of Conway-Sloane: integral coordinates for lattices*
YoungMin Lee, Seoul National University [SS-13-6]
- 17:20 *Invariant factor relations and Ramanujan's ternary quadratic form*
Larry J. Gerstein, University of California, Santa Barbara [SS-13-7]

December 17 (Thu.)

Room : B152

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- 09:00 – 10:50 Chair: A. Earnest(Southern Illinois University Carbondale)
- 09:00 *Type numbers of quaternion hermitian lattices, quinary lattices, and supersingular abelian varieties*
Tomoyoshi Ibukiyama, Osaka University [SS-13-8]
- 09:30 *The regularity of spinor genera of quadratic forms*
Constantin N. Beli, IMAR [SS-13-9]
- 10:20 *Arithmetic of positive ternary quadratic forms*
Byeong-Kweon Oh, Seoul National University [SS-13-10]

December 17 (Thu.)

Room : B152

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- 14:30 – 17:45 Chair: Wai Kiu Chan(Wesleyan University)
- 14:30 *Isospectral ternary forms over $\mathbf{F}_q[T]$*
Jean Bureau, Louisiana State University,
Jorge Morales*, Louisiana State University [SS-13-11]
- 14:55 *Integral points for groups of multiplicative type*
Fei Xu, Academy of Mathematics and System Science [SS-13-12]
- 15:30 *Small zeros of hermitian forms over quaternion algebras*
Wai Kiu Chan, Wesleyan University,
Lenny Fukshansky*, Claremont McKenna College [SS-13-13]
- 15:55 *Representations of diagonal quadratic forms whose coefficients are consecutive positive integers*
Byeong Moon Kim, Gangneung-Wonju National University [SS-13-14]
- 16:30 *A simple generalization of Voronoï's theorem*
Takao Watanabe, Osaka University [SS-13-15]
- 16:55 *Solvability of some entangled diophantine equations*
Poo-Sung Park, Kyungnam University [SS-13-16]
- 17:20 *Sets of integers represented by integral quadratic forms*
Andrew G. Earnest, Southern Illinois University Carbondale [SS-13-17]

SS-14. Symplectic Geometry and Mirror Symmetry

December 18 (Fri.) Room : B221

09:20 – 11:00 Chair: Yong-Geun Oh(University of Wisconsin)
09:20 *Rabinowitz Floer homology*
Urs Frauenfelder, Seoul National University [SS-14-1]

10:10 *Exotic symplectic structures from Lefschetz fibration*
Paul Seidel*, MIT,
Maksim Maydanskiy, Stanford/MSRI [SS-14-2]

December 19 (Sat.) Room : B221

08:30 – 10:50 Chair: Cheol-Hyun Cho(Seoul National University)
08:30 *Linearized contact homology and connected sums*
Frederic Bourgeois, Universite Libre de Bruxelles,
Otto van Koert*, Seoul National University [SS-14-3]

09:20 *The quantum master equation of string theory*
Alexander A. Voronov, University of Minnesota [SS-14-4]

10:10 *The de Rham theorem for twisted cohomology and homological transfer*
Ezra Getzler, Northwestern University [SS-14-5]

December 19 (Sat.) Room : B221

14:30 – 17:40 Chair: Jae-Suk Park(Yonsei University)
14:30 *On A_∞ -enhancements for triangulated categories*
Hiroshige Kajiura, Chiba University [SS-14-6]

15:20 *Leafwise intersection points*
Jungsoo Kang, Seoul National University [SS-14-7]

15:40 *Homotopy cyclic A_∞ -algebras and negative cyclic cohomology*
Cheol-hyun Cho, Seoul National University,
Sangwook Lee*, Seoul National University [SS-14-8]

- 16:10 *Coherent-constructible correspondence for toric varieties and stacks*
Bohan Fang*, Northwestern University,
Chiu-Chu Melissa Liu, Columbia University,
David Treumann, Northwestern University,
Eric Zaslow, Northwestern University [SS-14-9]
- 16:50 *Gradient-like vector fields for a Morse function on a complex analytical variety*
Cheol-Hyun Cho, Seoul National University,
Giovanni Marelli*, Korea Institute for Advanced Study [SS-14-10]
- 17:20 *Semifree circle actions on 6-dimensional symplectic manifolds*
Yunhyung Cho*, KAIST,
Taekkyu Hwang, KAIST,
Dong Youp Suh, KAIST [SS-14-11]

SS-15. Nonlinear Partial Differential Equations and Viscosity Solutions

December 18 (Fri.)

Room : B143

08:30 – 10:50

Chair: Seick Kim(Yonsei University)

- 08:30 *Almost monotonicity formulas for elliptic and parabolic operators with variable coefficients*
 Norayr Matevosyan, University of Cambridge,
 Arshak Petrosyan*, Purdue University [SS-15-1]
- 09:20 *Weak KAM aspects of Hamilton-Jacobi equations with the Neumann type boundary condition*
 Hitoshi Ishii, Waseda University [SS-15-2]
- 10:10 *A price formulation problem: global well-posedness of solutions*
 Inwon Kim, UCLA [SS-15-3]
- 10:30 *Nonlinear gradient estimates for elliptic and parabolic equations*
 Sun-Sig Byun*, Seoul National University,
 Lihe Wang, University of Iowa [SS-15-4]

December 19 (Sat.)

Room : B143

14:30 – 16:50

Chair: Inwon Kim(UCLA)

- 14:30 *Geometric methods for two-dimensional water waves*
 Georg S. Weiss, University of Tokyo [SS-15-5]
- 15:20 *Non-negatively cross-curved transportation costs*
 Alessio Figalli, University of Texas,
 Young-Heon Kim*, University of British Columbia,
 Robert McCann, University of Toronto [SS-15-6]
- 16:10 *Global estimates for Green's matrices of second order elliptic systems*
 Seick Kim, Yonsei University [SS-15-7]
- 16:30 *Some regularity results for fully nonlinear integro-differential operators with certain positive kernels*
 Yong-Cheol Kim, Korea University [SS-15-8]

December 20 (Sun.)

Room : B143

- 08:30 – 10:30 Chair: Hitoshi Ishii(Waseda University)
- 08:30 *A free boundary problem arising from flame propagation*
Sunhi Choi, University of Arizona [SS-15-9]
- 09:20 *Parabolic and elliptic systems in divergence form with variably partially BMO coefficients*
Hongjie Dong, Brown University,
Doyoon Kim*, University of Southern California [SS-15-10]
- 09:40 *Free boundary value problem of the Navier-Stokes equations with surface tension*
Hantaek Bae, University of Maryland, College Park [SS-15-11]
- 10:10 *Smooth solution for the porous medium equation in a bounded domain*
Sunghoon Kim*, Seoul National University,
Ki-Ahm Lee, Seoul National University [SS-15-12]

SS-16. Spectral Geometry and Global Analysis

December 19 (Sat.)

Room : B137

08:30 – 10:50 Chair: Jinsung Park(Korea Institute for Advanced Study)

08:30 *Riemannian geometry of loop spaces*
 Yoshiaki Maeda, Keio University,
 Steven Rosenberg*, Boston University,
 Fabian Torres-Ardila, Boston University [SS-16-1]

09:20 *Harmonic characteristic vector field on unit tangent sphere bundle*
 SunHyang Chun, Sungkyunkwan University,
 JeongHyeong Park*, Sungkyunkwan University,
 Kouei Sekigawa, Niigata University [SS-16-2]

10:10 *Lower bounds for the eigenvalues of the basic Dirac operator*
 Seoung Dal Jung, Jeju National University [SS-16-3]

December 19 (Sat.)

Room : B137

14:30 – 16:00 Chair: Maxim Braverman(Northeastern University)

14:30 *Selberg zeta type products for Kleinian groups*
 Andrew McIntyre, Bennington College [SS-16-4]

15:20 *Spectral invariants and dynamical zeta functions for noncompact hyperbolic manifolds*
 Jinsung Park, Korea Institute for Advanced Study [SS-16-5]

16:10 – 17:40 Chair: JeongHyeong Park(Sungkyunkwan University)

16:10 *Half-torsion and refined half-torsion of the cone-complex*
 Maxim Braverman, Northeastern University [SS-16-6]

17:00 *The refined analytic torsion on a compact manifold with boundary*
 Yoonweon Lee*, Inha University,
 Rung-Tzung Huang, Academia Sinica [SS-16-7]

SS-17. Algebraic Combinatorics

December 16 (Wed.)

Room : B153

-
- 14:30 – 16:00 Chair: Michelle Wachs(University of Miami)
- 14:30 *Quantum affine algebras and crystal bases*
Seok-Jin Kang, Seoul National University [SS-17-1]
- 15:20 *Macdonald polynomials and quasisymmetric functions*
James Haglund, University of Pennsylvania [SS-17-2]

-
- 16:10 – 17:40 Chair: Sangwook Ree(Suwon University)
- 16:10 *A compound determinant identity and its application*
Soichi Okada, Nagoya University [SS-17-3]
- 17:00 *Combinatorial formula for Schur coefficients of integral form of Macdonald polynomials*
Meesue Yoo, University of California, San Diego [SS-17-4]

December 17 (Thu.)

Room : B153

-
- 08:30 – 10:50 Chair: Seul Hee Choi(Jeonju University)
- 08:30 *Rees products of posets, lexicographic shellability and multiset derangements*
Michelle Wachs, University of Miami [SS-17-5]
- 09:20 *Colored permutations and generalizations of derangements*
Seunghyun Seo*, Kangwon National University,
Dongsu Kim, KAIST [SS-17-6]
- 10:10 *Topology of real coordinate arrangements*
Sangwook Kim, George Mason University [SS-17-7]
- 10:30 *Weakly separated sets, purity conjecture and plabic graphs*
Suho Oh*, MIT,
Alexander Postnikov, MIT,
David Speyer, MIT [SS-17-8]

December 17 (Thu.)

Room : B153

14:30 – 16:00

Chair: Ira Gessel(Brandeis University)

14:30 *Combinatorial and colorful cyclic sieving phenomena*Yuval Roichman, Bar Ilan University,
Bruce Sagan*, Michigan State University

[SS-17-9]

15:20 *Equivariant K-theory of Grassmannians*Hugh Thomas, University of New Brunswick,
Alexander Yong*, University of Illinois at Urbana-Champaign

[SS-17-10]

16:10 – 17:40

Chair: Ae Ja Yee(Penn. State University)

16:10 *Bruhat order, smooth Schubert varieties, and hyperplane arrangement*Suho Oh, MIT,
Alexander Postnikov, MIT,
Hwanchul Yoo*, MIT

[SS-17-11]

16:30 *Infinite families of recursive formulas generating power moments of ternary Kloosterman sums with trace nonzero square arguments: $o(2n + 1, 2^r)$ case*

Dae San Kim, Sogang University

[SS-17-12]

17:00 *Geometry of sumsets and additive combinatorics*

Jaewoo Lee, City University of New York

[SS-17-13]

December 18 (Fri.)

Room : B153

08:30 – 10:50

Chair: SeungKyung Park(Yonsei University)

08:30 *Chung-Feller theorems*

Ira M. Gessel, Brandeis University

[SS-17-14]

09:20 *New interpretations for noncrossing partitions of classical types*

Jang Soo Kim, University of Paris 7

[SS-17-15]

10:10 *Göllnitz-Gordon identities and parity questions in partitions*Sun Kim, University of Illinois at Urbana Champaign,
Ae Ja Yee*, Penn State University

[SS-17-16]

SS-18. Ergodic Theory and Dynamical Systems

December 17 (Thu.) Room : B220

- 08:30 – 10:30 Chair: Jane Hawkins(University of North Carolina at Chapel Hill)
- 08:30 *A class of subshifts that arise from certain codes*
 Wolfgang Krieger, University of Heidelberg [SS-18-1]
- 08:55 *Factor maps between shift spaces and invariant measures*
 Sujin Shin*, KAIST,
 Jisang Yoo, KAIST [SS-18-2]
- 09:20 *On the existence of certain codes between subshifts*
 Uijin Jung, KAIST [SS-18-3]
- 09:45 *The zeta functions and generating functions of renewal systems*
 Soonjo Hong, Seoul National University [SS-18-4]
- 10:10 *Complexity of a class of minimal systems*
 Young-Ho Ahn, Mokpo National University [SS-18-5]

December 17 (Thu.) Room : B220

- 14:30 – 16:30 Chair: Keonhee Lee(Chungnam National University)
- 14:30 *Spectral properties of approximately transitive transformations*
 Jane Hawkins, University of North Carolina at Chapel Hill [SS-18-6]
- 14:55 *Maximally continuous factors of measurable semiflows*
 David McClendon, Northwestern University [SS-18-7]
- 15:20 *Hyperbolicity of C^1 -stably expansive homoclinic classes*
 Manseob Lee*, Mokwon University,
 Keonhee Lee, Chungnam National University [SS-18-8]
- 15:45 *C^1 -generic diffeomorphisms with specification property*
 Khosro Tajbakhsh*, Chungnam National University,
 Keonhee Lee, Chungnam National University [SS-18-9]
- 16:10 *Hyperbolic structure of chain components and homoclinic classes for C^1 vector fields*
 Le Huy Tien, Chungnam National University [SS-18-10]

December 18 (Fri.)

Room : B220

08:30 – 10:30

Chair: Wolfgang Kreiger(University of Heidelberg)

08:30 *On the number of fixed points of sofic flip system*Young-One Kim*, Seoul National University,
Sieye Ryu, Seoul National University

[SS-18-11]

08:55 *Invariant measures for non-primitive tiling substitutions.*Maria Isabel Cortez, Universidad de Santiago de Chile,
Boris Solomyak*, University of Washington

[SS-18-12]

09:20 *Pure point spectrum and coincidences on substitution point sets*Shigeki Akiyama, University of Niigata,
Jeong-Yup Lee*, Korea Institute for Advanced Study

[SS-18-13]

09:45 *Potential overlap coincidence and fractal boundary*

Shigeki Akiyama, Niigata University

[SS-18-14]

10:10 *Computing the critical dimensions of Bratteli-Vershik systems (Preliminary report)*Anthony H. Dooley, University of New South Wales,
Rika Hagihara*, University of New South Wales

[SS-18-15]

December 19 (Sat.)

Room : B220

08:30 – 09:40

Chair: Kyewon Koh Park(Ajou University)

08:30 *Return time complexity of Sturmian sequences*

Dong Han Kim, The University of Suwon

[SS-18-16]

08:55 *Combinatorial description of Sierpinski Julia sets of rational maps*

Monica Moreno-Rocha, Centro de Investigacion en Matematicas

[SS-18-17]

09:20 *On embedded bifurcation structure in some discretized vector fields*

Hunseok Kang, Kyungpook National University

[SS-18-18]

SS-19. Inverse Problems and Imaging

December 18 (Fri.)

Room : B136

- 08:30 – 10:50 Chair: Hyeonbae Kang(Inha University)
- 08:30 *The Calderon problem with partial data in dimension three or higher*
Gunther Uhlmann, University of Washington [SS-19-1]
- 09:05 *Reconstruction of small interface of an elastic inclusion from modal measurements*
Habib Ammari, Ecole Polytechnique,
Elena Beretta, Universita di Roma,
Elisa Francini, Universita degli Studi di Firenze,
Hyeonbae Kang, Inha University,
Mikyong Lim*, KAIST [SS-19-2]
- 09:45 *Partial Cauchy data for general second order elliptic operators in two dimensions*
Oleg Emanouilov*, Colorado State University,
Gunther Uhlmann, University of Washington,
Masahiro Yamamoto, University of Tokyo [SS-19-3]
- 10:20 *A reconstruction technique of magnetic resonance imaging using*
June-Yub Lee, Ewha Womans University [SS-19-4]

December 19 (Sat.)

Room : B136

- 08:30 – 10:50 Chair: Gunther Uhlmann(University of Washington)
- 08:30 *The geodesic X-ray transform with caustics*
Plamen Stefanov, Purdue University [SS-19-5]
- 09:05 *Denoising of B_z data for conductivity reconstruction in magnetic resonance electrical impedance tomography(MREIT)*
Chang-Ock Lee*, KAIST,
Seonmin Ahn, KAIST,
Kiwon Jeon, KAIST [SS-19-6]
- 09:45 *Numerical methods for first-arrival and multi-arrival travelttime tomography*
Jianliang Qian, Michigan State University [SS-19-7]
- 10:20 *MEG/EEG brain imaging - beamforming technique*
Jun Hee Hong, Gwangju Institute of Science and Technology,
Seokha Ko, Gwangju Institute of Science and Technology,
Sung Chan Jun*, Gwangju Institute of Science and Technology [SS-19-8]

December 19 (Sat.)

Room : B136

14:30 – 17:00

Chair: Hyeonbae Kang(Inha University)

14:30 *Characterization of errors in one-step Gauss-Newton linear algorithm for EIT*

Jin Keun Seo, Yonsei University

[SS-19-9]

15:10 *Experiments and analysis of elastography for the reconstruction of stiffness*

Jeong-Rock Yoon, Clemson University

[SS-19-10]

15:50 *Asymptotic imaging of cracks*

Habib Ammari, Ecole Polytechnique,

Hyeonbae Kang, Inha University

Hyundae Lee*, Inha University,

Won-Kwang Park, Ecole Superieure d'Electricit

[SS-19-11]

16:30 *Elastic-wave inverse scattering and seismic receiver functions*

Maarten V. de Hoop, Purdue University

[SS-19-12]

SS-20. Operator Theory In Analytic Function Spaces

December 16 (Wed.)

Room : B134

14:30 – 15:10 Chair: Kehe Zhu(SUNY at Albany)

14:30 *Carleson measures and their non-tangential average*
Minqing Gong, Guizhou University,
Zhijian Wu*, The University of Alabama [SS-20-1]

15:20 – 16:00 Chair: Kehe Zhu(SUNY at Albany)

15:20 *Bloch-Bergman pullbacks with logarithmic weights*
Ern Gun Kwon, Andong National University [SS-20-2]

15:40 *Three problems for weighted Bloch-Lipschitz spaces of holomorphic functions on the unit ball*
H. Turgay Kaptanoğlu*, Bilkent University,
Serdar Tülü, İzmir Institute of Technology [SS-20-3]

16:10 – 16:50 Chair: Keiji Izuchi(Niigata University)

16:10 *On the impossible decomposition of some composite entire functions*
Peter Tien-Yu Chern*, I-Shou University,
In Soo Kim, Chonbuk National University [SS-20-4]

16:30 *Szegö's theorem and uniform algebras (application for Bergman space)*
Takahiko Nakazi, Hokusei Gakuen University [SS-20-5]

17:00 – 17:40 Chair: Keiji Izuchi(Niigata University)

17:00 *Hypercyclic property of weighted composition operators on the unit ball*
Renyu Chen*, Tianjin University,
Zehua Zhou, Tianjin University [SS-20-6]

17:20 *Composition operators on holomorphic Sobolev spaces in B_n*
Hyungwoon Koo, Korea University,
Inyoung Park*, Korea University [SS-20-7]

December 17 (Thu.)

Room : B134

08:30 – 09:10

Chair: Boo Rim Choe(Korea University)

08:30 *Composition operators and closures of some Möbius invariant spaces in the Bloch space*

Rauno Aulaskari*, University of Joensuu,
Ruhan Zhao, SUNY-BROCKPORT

[SS-20-8]

09:20 – 10:00

Chair: Ern Gun Kwon(Andong National University)

09:20 *Weighted composition operators on some Fock-type spaces $\mathcal{F}_\alpha^\infty$*

Sei-Ichiro Ueki, Ibaraki University

[SS-20-9]

09:40 *Hyponormality of Toeplitz operators*

Yufeng Lu*, Dalian University of Technology,
Yanyue Shi, Dalian University of Technology

[SS-20-10]

10:10 – 10:50

Chair: Ern Gun Kwon(Andong National University)

10:10 *Heat flow and the compactness of Berezin-Toeplitz operators*

Wolfram Bauer*, Ernst-Moritz-Arndt Universität Greifswald,
Lewis A. Coburn, State University of New York at Buffalo,
Josh Isralowitz, State University of New York at Buffalo

[SS-20-11]

10:30 *A finite multiplicity Helson-Lowdenslager-De Branges theorem*

Dinesh Singh, University of Delhi

[SS-20-12]

December 17 (Thu.)

Room : B134

14:30 – 15:10

Chair: Zhijian Wu(University of Alabama)

14:30 *Ranks of invariant subspaces of the Hardy space over the bidisk*

Keiji Izuchi*, Niigata University,
Kou Hei Izuchi, Korea University,
Yuko Izuchi

[SS-20-13]

15:20 – 16:00

Chair: Zhijian Wu(University of Alabama)

15:20 *Module ranks, Hilbert functions and defect operators of submodules in the Hardy space over the bidisk*

Michio Seto, Shimane University

[SS-20-14]

15:40 *Compactness of Hankel operators on the Hardy space of the polydisk*
Kehe Zhu, SUNY at Albany [SS-20-15]

16:10 – 16:50 Chair: Nikolai Vasilevski(CINVESTAV del I. P. N.)

16:10 *What is Q_p Carleson measure?*
Jie Xiao, Memorial University [SS-20-16]

16:30 *The boundary vanishing property of the Berezin transform on the harmonic Bergman space*
Boo Rim Choe, Korea University,
Kyesook Nam*, Hanshin University [SS-20-17]

17:00 – 17:40 Chair: Nikolai Vasilevski(CINVESTAV del I. P. N.)

17:00 *Boundary behavior of Bergman kernel for tube domain of infinite type*
Hanjin Lee, Handong Global University [SS-20-18]

17:20 *An operator-valued function space integral via the conditional Feynman integral on an analogue of Wiener space*
Dong Hyun Cho, Kyonggi University [SS-20-19]

December 18 (Fri.) Room : B134

08:30 – 09:10 Chair: Turgay Kaptanoglu(Bilkent University)

08:30 *Closed range composition operators on the small Bloch-type spaces*
Nina Zorboska, University of Manitoba [SS-20-20]

09:20 – 10:00 Chair: Takahiko Nakazi(Hokusei Gakuen University)

09:20 *Linear sums of two composition operators on the Fock space*
Kou Hei Izuchi, Korea University [SS-20-21]

09:40 *Holomorphic mean Lipschitz spaces and Hardy Sobolev spaces on the unit ball*
Hong Rae Cho*, Pusan National University,
Kehe Zhu, SUNY at Albany [SS-20-22]

SS-22. Cryptography

December 17 (Thu.)

Room : B139

-
- 14:30 – 17:40 Chair: Sang Geun Hahn(KAIST)
- 14:30 *Efficient divisor reduction on hyperelliptic curves*
 Roberto Avanzi, Ruhr-Universitaet Bochum,
 Michael J. Jacobson Jr., University of Calgary,
 Renate Scheidler*, University of Calgary [SS-22-1]
- 15:20 *Implementation of the function field sieve in the medium prime-power case over $GF(3^6n)$*
 Tsuyoshi Takagi, Future University Hakodate [SS-22-2]
- 16:10 *Improved computation of square roots in specific finite fields*
 Dong-Guk Han*, Kookmin University,
 Dooho Choi, ETRI,
 Howon Kim, Pusan National University [SS-22-3]
- 16:30 *Constructing pairing-friendly curves with variable CM discriminant*
 Cheol-Min Park*, Ewha Womans University,
 Hyang-Sook Lee, Ewha Womans University [SS-22-4]
- 17:00 *Generalized algorithm for DLP with auxiliary inputs*
 Jung Hee Cheon*, Seoul National University,
 In-Sok Lee, Seoul National University [SS-22-5]

December 19 (Sat.)

Room : B139

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- 08:30 – 10:50 Chair: Younhwan Cheon(KAAY)
- 08:30 *Efficient pairing computation and its classification*
 Hyang-Sook Lee, Ewha Womans University [SS-22-6]
- 09:20 *Constructing trapdoor DL groups*
 Hyung Tae Lee*, Seoul National University,
 Jung Hee Cheon, Seoul National University [SS-22-7]
- 09:40 *Attacking the lattice challenge*
 Moon Sung LEE, National Institute for Mathematical Sciences [SS-22-8]
- 10:10 *A new rate-1 double-piped mode of operation*
 Jooyoung Lee*, The Attached Institute of ETRI,
 John Steinberger, Tsinghua University [SS-22-9]

- 10:30 *Security analysis and improvement of an anonymous asymmetric fingerprinting scheme with trusted third party*
Saeran Kwon, Daelim University [SS-22-10]

December 19 (Sat.)

Room : B139

- 14:30 – 18:00 Chair: Yongjin Yeom(ETR)
- 14:30 *Explicit formulae for certain primitive varieties associated to elliptic curves*
Takakazu Satoh, Tokyo Institute of Technology [SS-22-11]
- 15:20 *Computing on encrypted data*
Craig Gentry, IBM [SS-22-12]
- 16:10 *The reputational model-based IDentity management system*
Ho Jung Lee*, Hanyang University,
Jung Hwan Song, Hanyang University [SS-22-13]
- 16:30 *RSA-based trapdoor commitment scheme with useful properties*
Taek-Young Youn, Korea University [SS-22-14]
- 17:00 *Privacy preserving method for ITS*
Hyojin Yoon, IT R &D Center, Samsung SDS [SS-22-15]
- 17:20 *Identity-based verifiably encrypted signatures without random oracles*
Juhee Lee*, Ewha Womans University,
Kyung-Ah Shim, National Institute for Mathematical Sciences,
Hyang-Sook Lee, Ewha Womans University [SS-22-16]
- 17:40 *Self-dual codes with automorphism of order 3 having 8 cycles*
HyunJin Kim, Yonsei University [SS-22-17]

SS-23. Creativity, Giftedness and Talent Development in Mathematics

December 17 (Thu.)

Room : B138

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- 08:30 – 10:50 Chair: Jennifer Suh(George Mason University)
- 08:30 *Conjecture-proof-refutation and mathematical creativity*
Bharath Sriraman, The University of Montana [SS-23-1]
- 09:20 *Analysing the process of discovery and verification of the mathematically gifted students*
GwiSoo Na, Cheongju National University of Education [SS-23-2]
- 09:50 *Inclusion of ambiguity in creativity development*
Donghwan Lee*, Seoul National Univ,
Taek-keun Oh, Gyeonggi Science High School,
Kyeong-Hwa Lee, Seoul National University [SS-23-3]
- 10:20 *Comparative study on multiple intelligence factor of Korean gifted high school students in the field of mathematics and science*
Suyeon Park*, Ewha Womans University,
Sanghun Song, Gyeongin National University of Education [SS-23-4]

December 17 (Thu.)

Room : B138

-
- 14:30 – 17:10 Chair: Han Hyuk Cho(Seoul National University)
- 14:30 *Educating gifted students from diverse populations: developing mathematical potential of underrepresented groups with mathematical promise through problem solving and algebraic reasoning*
Jennifer Suh*, George Mason University,
Padhu Seshaiyer, George Mason University,
Kerri Fulginiti, Fairfax County Public Schools [SS-23-5]
- 15:00 *Developing reading program for the mathematically gifted students*
Gyuhee Yi*, Seoul National University,
Gapju Hong, Busan National University of Education,
Younggi Choi, Seoul National University [SS-23-6]
- 15:30 *Students-centered exploration in geometry with technology experiences for mathematical conjecture and its extension*
Inchul Jung, Korea University [SS-23-7]

- 16:10 *The art of Chinese abacus (Part 1)*
Youyu Phillips*, Keystone College,
Roy Phillips, Howard Gardner School for Discovery,
Mingchun Du, Former Chinese Accounting [SS-23-8]
- 16:40 *Relations between algebraic generalization and representation of Korean gifted students*
Jiwon Kim*, Ewha Womans University,
Sanghun Song, Gyeongin National University of Education [SS-23-9]

December 18 (Fri.)

Room : B138

- 08:30 – 10:00 Chair: Inchul Jung(Korea University)
- 08:30 *A study on mathematically gifted students' understanding of conditional statements*
Suh-Ryung Kim, Seoul National University,
Kyeong-Hwa Lee, Seoul National University,
Eun-Sung Ko, Seoul National University,
Boram Park*, Seoul National University [SS-23-10]
- 09:00 *Thinkable objects for spatial-visualization and mathematization*
Han Hyuk Cho*, Seoul National University,
MinHo Song, Seoul National University [SS-23-11]
- 09:30 *Development of a cognitive ability test for intellectually gifted elementary students*
Jin-Kon Hong, Kunkuk University,
Kyung-Hwa Lee, Seoul National University,
Eun-Sung Ko*, Seoul National University [SS-23-12]

SS-24. Knot Theory and Related Topics

December 16 (Wed.)

Room : B222

-
- 14:30 – 17:40 Chair: Jae Choon Cha(POSTECH)
- 14:30 *Knot theory invariants in algebraic geometry*
Laurentiu Maxim, University of Wisconsin [SS-24-1]
- 15:20 *An $SU(3)$ Casson invariant of rational homology spheres*
Hans U. Boden, McMaster University,
Christopher M. Herald*, University of Nevada, Reno [SS-24-2]
- 16:10 *Parity criterion for unstabilized Heegaard splittings*
Jung Hoon Lee, Korea Institute for Advanced Study [SS-24-3]
- 16:40 *Non-conjugate braids with the same closure link*
Alexander Stoimenow, KAIST [SS-24-4]
- 17:00 *Satellite twisted torus knots*
Sangyop Lee, Chung-Ang University [SS-24-5]

December 17 (Thu.)

Room : B222

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- 08:30 – 10:50 Chair: Laurentiu Maxim(University of Wisconsin)
- 08:30 *An obstruction to slicing iterated Bing doubles*
Cornelia Van Cott, University of San Francisco [SS-24-6]
- 09:20 *Splittings of von Neumann rho-invariants*
Se-Goo Kim*, Kyung Hee University,
Taehee Kim, Konkuk University [SS-24-7]
- 09:40 *Lattice edge number of figure eight knot*
Hun Kim, Korea Science Academy,
Gyo Taek Jin*, KAIST,
Choon Bae Jeon, Daeduk University,
Seung Uk Jang, KAIST,
Sang Hyuk Moon, Korea Science Academy,
Sang Hyun Park, Korea Science Academy,
Yoo Shin Song, Korea Science Academy [SS-24-8]

10:10 *Twisted Alexander polynomials of hyperbolic knots*
 Stefan Friedl*, University of Warwick,
 Nicholas Jackson, University of Warwick,
 Nathan Dunfield, University of Illinois,
 Stefano Vidussi, University of California, Riverside [SS-24-9]

December 17 (Thu.) Room : B222

14:30 – 16:50 Chair: Taehee Kim(Konkuk University)

14:30 *The A-B slice problem and topological arbiters*
 Vyacheslav Krushkal, University of Virginia [SS-24-10]

15:20 *Geometric filtrations of link concordance and higher-order Arf invariants*
 Rob Schneiderman*, Lehman College, City University of New York,
 Jim Conant, University of Tennessee, Knoxville,
 Peter Teichner, University of California, Berkeley [SS-24-11]

16:10 *A characterization of heptagonal knots*
 Youngsik Huh, Hanyang University [SS-24-12]

16:30 *On the Kauffman bracket polynomial of links with local symmetry*
 Yongju Bae, Kyungpook National University [SS-24-13]

December 18 (Fri.) Room : B222

08:30 – 10:50 Chair: Stefan Friedl(University of Warwick)

08:30 *Metabelian $SL(n, \mathbb{C})$ representations of knot groups*
 Hans U. Boden*, McMaster University,
 Stefan Friedl, University of Warwick [SS-24-14]

09:20 *Symmetric unions indistinguishable by knot Floer and Khovanov homology*
 Toshifumi Tanaka, POSTECH [SS-24-15]

09:40 *A family of braids with large conjugacy invariant sets*
 Byung Hee An*, KAIST,
 Ki Hyoung Ko, KAIST [SS-24-16]

10:10 *L^2 -signature defects and amenable groups*
 Jae Choon Cha*, POSTECH,
 Kent Orr, Indiana University [SS-24-17]

December 19 (Sat.)

Room : B222

08:30 – 10:50

Chair: Ki Hyoung Ko(KAIST)

08:30 *Homology cylinders in knot theory*Hiroshi Goda, Tokyo University of Agriculture and Technology,
Takuya Sakasai*, Tokyo Institute of Technology

[SS-24-18]

09:20 *Combinatorial torsions and the cobordism group of homology cylinders*Jae Choon Cha, POSTECH,
Stefan Friedl, University of Warwick,
Taehee Kim*, Konkuk University

[SS-24-19]

10:10 *Witt rings in low dimensional topology*

Stanislav Jabuka, University of Nevada, Reno

[SS-24-20]

- 09:10 *Solving the quasi-variational signorini inequality by the method of successive approximation*
 Robert V. Namm*, Pacific National University,
 Alexander Z. Sin, Pacific National University,
 Gyungsoo Woo, Changwon National University [SS-25-8]
- 09:50 *Analysis of frequency dependent impedance changes due to membranes*
 Sungwhan Kim*, Hanbat National University,
 Jin Keun Seo, Yonsei University,
 Eung Je Woo, Kyung Hee University [SS-25-9]
- 10:10 *High-order models for image denoising and it's applications*
 Hyeona Lim, Mississippi State University [SS-25-10]
- 10:30 *Multiphase image segmentation via Modica-Mortola phase transition*
 Yoon Mo Jung*, CSE, Yonsei University,
 Sung Ha Kang, Georgia Institute of Technology,
 Jianhong Shen, Lotus Hill Institute for Computer Vision and Information Science [SS-25-11]

December 17 (Thu.)

Room : B136

- 14:30 – 17:10 Chair: Jun Seok Kim(Korea University)
- 14:30 *A priori and a posteriori analysis of mixed finite element methods for nonlinear elliptic equations*
 Dongho Kim, Yonsei University,
 Eun-Jea Park*, Yonsei University [SS-25-12]
- 14:50 *The decoupled dual singular function method to solve Helmholtz equation with singularities*
 Jae-Hong Pyo, Kangwon National University [SS-25-13]
- 15:10 *High order numerical approximations of nonlinear wave interactions with singular potentials*
 Jae-Hun Jung, SUNY at Buffalo [SS-25-14]
- 15:30 *The immersed boundary method with porous boundary*
 Yongsam Kim*, Chung-Ang University,
 Ming-Chih Lai, National Chiao Tung University,
 Charles S. Peskin, New York University [SS-25-15]
- 16:10 *Error estimates of stochastic optimal Neumann boundary control problems*
 Jangwoon Lee, University of Mary Washington [SS-25-16]

16:30 *Large scale simulations based on the spectral element discontinuous Galerkin methods: nanoscience and accelerator applications*

Misun Min, Argonne National Laboratory

[SS-25-17]

16:50 *Dipole-induced, first-order phase transitions of nano-rod monolayers*

Joohee Lee*, University of North Carolina at Chapel Hill,
M. G. Forest, University of North Carolina at Chapel Hill,
Qi Wang, University of South Carolina,
Ruhai Zhou, Old Dominion University

[SS-25-18]

SS-26. Mathematical Logic and Foundation

December 18 (Fri.)

Room : B152

- 08:30 – 10:50 Chair: Joohee Jeong(Kyungpook National University)
- 08:30 *Philosophical meanings of alternative set theory*
Chang Kyun Park, Seokyeong University [SS-26-1]
- 09:00 *Notions around the tree property*
Hyeung-joon Kim, Yonsei University [SS-26-2]
- 09:20 *Groupoids, amalgamation functors, and imaginaries*
John Goodrick, University of Maryland,
Byunghan Kim*, Yonsei University,
Alexei Kolesnikov, Towson University [SS-26-3]
- 09:50 *An algebraic approach to the Tarski-Seidenberg theorem in model theory*
Young Gon Bae, Yonsei University [SS-26-4]
- 10:10 *Bounded exponentiation on the affine plane*
Ivo Herzog*, Ohio State University at Lima,
Sonia L’Innocente, University of Camerino [SS-26-5]

December 19 (Sat.)

Room : B152

- 08:30 – 10:50 Chair: Seung On Lee(Chungbuk National University)
- 08:30 *A study on the model theory of separably closed fields*
Sunyoung Kim, Yonsei University [SS-26-6]
- 08:50 *Gödel’s ontological proof*
Woosik Hyun, Hoseo University [SS-26-7]
- 09:20 *c-nets*
Ji Hyun Oh*, Chungbuk National University,
Seung On Lee, Chungbuk National University,
Young Jin Pi, Chungbuk National University [SS-26-8]
- 09:40 *Forcing in classical logic*
Gyesik Lee, Seoul National University [SS-26-9]
- 10:10 *The extended logic tableau*
Joohee Jeong, Kyungpook National University [SS-26-10]

SS-27. Mathematical Biology

December 17 (Thu.)

Room : B132

14:30 – 15:10 Chair: Hyung-Chun Lee(Ajou University)

14:30 *Predictive high order computational fluid dynamics for vascular flows*
Jae-Hun Jung, SUNY at Buffalo [SS-27-1]

14:50 *Applications of optimal control theory to an HIV model*
Hee-Dae Kwon, Inha University [SS-27-2]

15:20 – 16:00 Chair: Chang-Ock Lee(KAIST)

15:20 *Couple of variational models for multi-phase segmentation*
Sung Ha Kang, Georgia Institute of Technology [SS-27-3]

15:40 *High-order methods for simulating cardiac electrophysiological phenomena*
Sehun Chun*, Imperial College,
Spencer J. Sherwin, Imperial College,
Robert M. Kirby, University of Utah,
Darryl D. Holm, Imperial College [SS-27-4]

16:10 – 16:50 Chair: Eunok Jung(Konkuk University)

16:10 *Physical Markov model for protein structure prediction*
Yeona kang*, SUNY at stonybrook,
Charles M. Fortmann, SUNY at stonybrook [SS-27-5]

16:30 *Implementation of conformational space annealing into CHARMM and its applications*
Jinhyuk Lee, Korea Institute for Advanced Study,
Jinwoo Lee*, Kwangwoon University,
Milan Hodoscek, Laboratory of Biophysical Chemistry,
Bernard R. Brooks, Laboratory of Biophysical Chemistry,
Jooyoung Lee, Korea Institute for Advanced Study [SS-27-6]

17:00 – 17:40 Chair: Byeong Chun Shin(Chonnam National University)

17:00 *Mathematical modeling for glucose insulin dynamics*
Imbunm Kim, Seoul National University [SS-27-7]

17:20 *Dynamics and network mechanisms of intermittent synchronous oscillations in sub-thalamic nucleus in Parkinson's disease*
 Choong Seok Park, Purdue University Indianapolis [SS-27-8]

December 18 (Fri.)

Room : B132

08:30 – 09:10 Chair: Inkyung Ahn(Korea University)

08:30 *Paradox of vaccination*
 Yasuhiro Takeuchi*, Shizuoka University,
 Shingo Iwami, University of Tokyo,
 Takafumi Suzuki, Shizuoka University [SS-27-9]

09:20 – 10:00 Chair: Younghae Do(Kyungpook National University)

09:20 *Pattern formation on growing tissue in the presence of gene expression time delays*
 S. Seirin Lee*, Okayama University,
 E. A. Gaffney, University of Oxford [SS-27-10]

09:40 *Theoretical prediction of SHIV pathogenesis*
 Shingo Iwami, Japan Science and Technology Agency & The University of
 Tokyo [SS-27-11]

10:10 – 10:50 Chair: Yongkuk Kim(Kyungpook National University)

10:10 *Analyzing neuronal networks using discrete dynamics*
 Sungwoo Ahn, The Ohio State University [SS-27-12]

10:30 *Optimal strategies of pandemic influenza*
 Eunok Jung*, Konkuk University,
 Gerardo Chowell, Arizona State University [SS-27-13]

December 19 (Sat.)

Room : B132

08:30 – 09:10 Chair: YongHoon Kwon(POSTECH)

08:30 *Improving methods for determining blood flow parameters in tumor regions*
 Jessica Mikhaylov, US Military Academy, West Point [SS-27-14]

08:50 *A mathematical model for blood vessel clotting caused by temperature induced vessel wall damage*
 Tim Kroeger, Fraunhofer MEVIS, Bremen, Germany [SS-27-15]

09:20 – 10:00 Chair: Hyung Ju Hwang(POSTECH)

09:20 *Model for solving dynamics of neurotransmitter release from hippocampal neurons*
Jisun Lim*, Seoul National University,
Yi Li, The University of Iowa,
N.C. Harata, The University of Iowa [SS-27-16]

09:40 *A-contrario decision framework for neuron branch detection*
HeeChang Kim, Universite Rene Descartes Paris 5 [SS-27-17]

10:10 – 10:50 Chair: Hyun-Min Kim(Pusan National University)

10:10 *Mathematical modeling for tuberculosis*
Sung Im Whang*, Ajou University,
Eun Ok Jung, Konkuk University,
Sun Hwa Choi, Konkuk University [SS-27-18]

10:30 *Computational methods for simulations of reaction networks*
Chang Hyeong Lee, Ulsan National Institute of Science and Technology [SS-27-19]

December 19 (Sat.) Room : B132

14:30 – 15:10 Chair: Youngmok Jeon(Ajou University)

14:30 *Mathematical modeling of cardiac arrhythmia*
Eun Bo Shim, Kangwon National University [SS-27-20]

15:20 – 16:00 Chair: Do Wan Kim(Hanyang University)

15:20 *Fluid-mechanical interaction of flexible bacterial flagella by the immersed boundary method*
Sookkyung Lim*, University of Cincinnati,
Charles S. Peskin, New York University [SS-27-21]

15:40 *On the cellular volume regulation in 2-D*
Pilhwa Lee, University of Connecticut Health Center [SS-27-22]

16:10 – 16:50 Chair: Yongsam Kim(Chung-Ang University)

16:10 *Numerical analysis of cell growth in scaffolds*
 Junseok Kim*, Korea University,
 Dongsun Lee, Korea University,
 Darae Jeong, Korea University [SS-27-23]

16:30 *The role of microenvironment in glioma invasion: a mathematical model*
 Yangjin Kim*, University of Michigan, Dearborn,
 Avner Friedman, Ohio State University,
 Sean Lawler, Ohio State University,
 Michal O. Nowicki, Ohio State University,
 E. Antonio Chiocca, Ohio State University [SS-27-24]

17:00 – 17:40 Chair: Jae-Hong Pyo(Kangwon National University)

17:00 *A heart model in the circulatory system*
 Wanho Lee*, Konkuk University,
 Yung Sam Kim, Chung-Ang University,
 Eunok Jung, Konkuk University [SS-27-25]

17:20 *A mathematical model for the cardiovascular system combining pulsatile and non-pulsatile components*
 Aurelio de los Reyes V.*, University of Graz,
 Franz Kappel, University of Graz [SS-27-26]

SS-28. Differential and Integral Geometry

December 16 (Wed.)

Room : B225

14:30 – 15:10 Chair: Young Jin Suh(Kyungpook National University)

14:30 *Injectivity properties of Funk-Radon type transforms over maximally curved spheres in compact symmetric spaces*

Eric Grinberg, University of New Hampshire [SS-28-1]

15:20 – 16:00 Chair: Jiazuo Zhou(Southwest University)

15:20 *Total absolute curvature as the average of total Gauss-Kronecker curvature and its application*

Jaigyoung Choe*, Korea Institute for Advanced Study,
Robert Gulliver, University of Minnesota [SS-28-2]

16:10 – 16:50 Chair: Byung Hak Kim(Kyung Hee University)

16:10 *On the distribution of a chord of a regular polygon*

Loredana Sorrenti, University of Reggio Calabria [SS-28-3]

16:30 *Explicit expressions of kinematic formulae in Riemannian homogeneous spaces*

Takashi Sakai, Tokyo Metropolitan University [SS-28-4]

17:00 – 17:40 Chair: Yongdo Lim(Kyungpook National University)

17:00 *A Trotter formula for Riemannian manifolds based on local midpoints*

Jimmie Lawson, Louisiana State University [SS-28-5]

December 17 (Thu.)

Room : B225

08:30 – 09:10

Chair: Jiazou Zhou(Southwest University)

08:30 *Extensions of the Petty projection and Busemann-Petty centroid inequalities*

Erwin Lutwak, Polytechnic Institute of NYU,

Deane Yang*, Polytechnic Institute of NYU,

Gaoyong Zhang, Polytechnic Institute of NYU

[SS-28-6]

08:50 *Symmetry group of supertorus*

Hoil Kim, Kyungpook National University

[SS-28-7]

09:20 – 10:00

Chair: Yongdo Lim(Kyungpook National University)

09:20 *The Ricci curvature in Finsler geometry*

Xinyue, Cheng, Chongqing University of Tech.

[SS-28-8]

09:40 *Some recent progress in geometric inequalities in differential geometry and geometric analysis*

Shihshu Walter Wei, The University of Oklahoma

[SS-28-9]

10:10 – 10:50

Chair: Hoil Kim(Kyungpook National University)

10:10 *A volume inequality for polar bodies*

Erwin Lutwak, Polytechnic Institute of NYU,

Deane Yang, Polytechnic Institute of NYU,

Gaoyong Zhang*, Polytechnic Institute of NYU

[SS-28-10]

10:30 *On the isoperimetric deficit*

Jiazou Zhou*, Southwest University,

Ming Li, Southwest University

[SS-28-11]

December 17 (Thu.)

Room : B225

14:30 – 15:10

Chair: Jaigyoung Choe(Korea Institute for Advanced Study)

14:30 *Sharp isoperimetric-type inequalities for Green's functions of uniformly elliptic equations*

J. Xiao, Memorial University

[SS-28-12]

15:20 – 16:30 Chair: Takashi Sakai(Tokyo Metropolitan University)

15:20 *Hypersurfaces of almost r -paracontact Riemannian manifolds*
Jae-Bok Jun*, Kookmin University,
Mobin Ahmad, Integral University [SS-28-13]

15:40 *Hamiltonian volume minimizing properties and tightness of real forms of complex hyperquadrics*
Hirosi Iriyeh, Tokyo Denki University [SS-28-14]

16:10 *Sphere-foliated minimal and constant mean curvature hypersurfaces in product spaces*
Keomkyo Seo, Sookmyung Women's University [SS-28-15]

16:40 – 17:40 Chair: Deane Yang(Polytechnic Institute of NYU)

16:40 *The convex hull of random points: harmonic sums as a new tool*
Christian Buchta, Salzburg University [SS-28-16]

17:20 *The Reeb vector fields and Ricci solitons*
Jong Taek Cho, Chonnam National University [SS-28-17]

December 18 (Fri.)

Room : B225

08:30 – 09:10 Chair: Gaoyong Zhang(Polytechnic Institute of NYU)

08:30 *Homogeneous hypersurfaces in hermitian symmetric spaces of rank 2*
Young Jin Suh, Kyungpook National University [SS-28-18]

08:50 *Real hypersurfaces in complex two-plane Grassmannians whose normal Jacobi operator is \mathfrak{D}^\perp -parallel*
Imsoon Jeong*, Kyungpook National University,
Young Jin Suh, Kyungpook National University [SS-28-19]

09:20 – 10:00 Chair: Byung Hak Kim(Kyung Hee University)

09:20 *Unique determination of convex polytopes by non-central sections*
Vladyslav Yaskin, University of Alberta [SS-28-20]

10:10 – 10:50 Chair: Young Jin Suh(Kyungpook National University)

10:10 *Minkowski type problems for variational functionals*
 Andrea Colesanti*, Universita' degli Studi di Firenze,
 Michele Fimiani, Universita' degli Studi di Firenze [SS-28-21]

December 19 (Sat.) Room : B225

08:30 – 09:30 Chair: Byung Hak Kim(Kyung Hee University)

08:30 *On bundle finiteness of almost submetry*
 Xiaochun Rong*, Rutgers University, Capital Normal University,
 Shicheng Xu, Capital Normal University [SS-28-22]

09:10 *Embeddedness of minimal submanifolds in homogeneous spaces*
 Sung-Hong Min, Seoul National University [SS-28-23]

09:40 – 10:40 Chair: Jiazuo Zhou(Southwest University)

09:40 *Comparisons of the Lorentzian volumes between level hypersurfaces*
 Jong Ryul Kim, Chonnam National University [SS-28-24]

10:00 *On Legendre curves in contact pseudo-Hermitian 3-manifolds*
 Ji-Eun Lee, Kyungpook National University [SS-28-25]

10:20 *Minimal annuli with constant contact angle along the planar boundaries*
 Juncheol Pyo, Seoul National University [SS-28-26]

December 19 (Sat.) Room : B225

14:30 – 15:30 Chair: Xiaochun Rong(Rutgers University, Capital Normal University)

14:30 *Extensions of the duality between minimal surfaces and maximal surfaces*
 Hojoo Lee, Seoul National University [SS-28-27]

14:50 *Plateau's problem in manifolds and the calculus of variations*
 Hwajeong Kim, Seoul National University [SS-28-28]

15:10 *Real hypersurfaces in a complex projective space with pseudo- \mathcal{D} -parallel structure
Jacobi operator*

Hyunjin Lee*, Kyungpook National University,
Juan de Perez, University de Granada,
Young Jin Suh, Kyungpook National University

[SS-28-29]

15:40 – 16:30

Chair: Jae-Bok Jun(Kookmin University)

15:40 *T-structure and the Yamabe invariant*

Chanyoung Sung, National Institute for Mathematical Sciences

[SS-28-30]

16:10 *The CR Yamabe flow*

Pak-Tung Ho, Purdue University

[SS-28-31]

16:40 – 17:40

Chair: Jaigyong Choe(Korea Institute for Advanced Study)

16:40 *On the classification of positive quaternionic Kähler manifolds with $b_4 = 1$*

Hee Kwon Lee, KAIST

[SS-28-32]

17:00 *Causal automorphisms of two-dimensional Minkowski space-time*

Do-Hyung Kim, Kyung Hee University

[SS-28-33]

17:20 *Rational rotational-minimizing frames and Pythagorean-hodograph curves*

Chang Yong Han, Kyung Hee University

[SS-28-34]

Contributed Talks

AL. Algebra

December 18 (Fri.)

Room : B150

15:00 – 16:00

Chair: Dae Yeol Jeon(Kongju National University)

15:00 *Some remarks on the finite lattice representation problem*

William DeMeo, University of Hawaii

[AL-1]

15:20 *The density of prime numer*

H. J. Jeong, TW Institute

[AL-2]

15:40 *A property of preperiodic points*

Su-ion Ih, University of Colorado at Boulder

[AL-3]

16:10 – 17:10

Chair: Sunsook Noh(Ewha Womans University)

16:10 *On an almost g^* -splitting set*

Byung Gyun Kang, POSTECH,
Jung Wook Lim*, POSTECH

[AL-4]

16:30 *Quasiideals of A P-regular near-ring*

Su-Jeong Choi, University of Dong-A

[AL-5]

16:50 *Characterization of balanced coherent configurations*

Reza Sharafdini*, Pusan National University,
Mitsugu Hirasaka, Pusan National University

[AL-6]

AN I. Analysis I

December 18 (Fri.)

Room : B149

15:00 – 16:00 Chair: Q-Heung Choi(Inha University)

15:00 *The calculus of indifferences*
Calvin H. Mittman, St. John's University [AN I-1]

15:20 *A study on Barnes' type multiple q -Euler polynomials*
Lee-Chae Jang*, Konkuk University,
Taekyun Kim, Kwangwoon University [AN I-2]

15:40 *A Fubini theorem for integral transforms and convolution products*
Seung Jun Chang, Dankook University,
Hyun Soo Chung*, Dankook University,
David Skoug, University of Nebraska, Lincoln [AN I-3]

16:10 – 17:10 Chair: Il Hyo Jung(Pusan National University)

16:10 *Uniquess property of initial valued KDV systems*
Jerry L. Bona, University of Illinois at Chicago,
Jonathan Cohen, DePaul University,
Gang Wang*, DePaul University [AN I-4]

16:30 *Multiple solutions for the mixed type nonlinear elliptic equation*
Tacksun Jung*, Kunsan National University,
Q-Heung Choi, Inha University [AN I-5]

16:50 *Leray-Schauder degree theory applied to the multiple solutions for the nonlinear parabolic problem*
Q-Heung Choi*, Inha University,
Tacksun Jung, Kunsan National University [AN I-6]

17:20 – 18:20 Chair: Tack Sun Jung(Kunsan National University)

17:20 *Global existence and stabilization of the nonlinear hyperbolic system with mixed boundary conditions*
Daewook Kim*, Pusan National University,
Hyun-wook Nam, Pusan National University,
Il Hyo Jung, Pusan National University [AN I-7]

- 17:40 *Generalized stability of a general quadratic functional equation*
Hark-Mahn Kim, Chungnam National University,
Minyoung Kim*, Chungnam National University [AN I-8]
- 18:00 *On the superstability of the some pexider type functional equations*
Gwang Hui Kim, Kangnam University [AN I-9]

AN II. Analysis II

December 18 (Fri.)

Room : B144

- 15:00 – 16:00 Chair: Inbo Sim(University of Ulsan)
- 15:00 *Heat kernel approach to a generalized quadratic functional equation in Fourier hyperfunctions*
Jae-Young Chung*, Kunsan National University,
Dohan Kim, Seoul National University [AN II-1]
- 15:20 *On norm-attaining mappings on Banach spaces*
Han Ju Lee*, Dongguk University,
Yun Sung Choi, POSTECH,
Hyun Gwi Song, National Institute for Mathematical Sciences [AN II-2]
- 15:40 *New criteria of some vector topologies on $\mathcal{B}(X, Y)$ and their applications*
Ju Myung Kim, POSTECH [AN II-3]

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- 16:10 – 17:10 Chair: Eungil Ko(Ewha Womans University)
- 16:10 *On *-moment sequence of operators*
Sun Hyun Park, Kyungpook National University [AN II-4]
- 16:30 *On gaps of operators via rank-one perturbations*
George Exner, Bucknell University,
Il Bong Jung, Kyungpook National University,
Eun Young Lee*, Kyungpook National University,
Mi Ryeong Lee, Kyungpook National University [AN II-5]
- 16:50 *An application of Furuta inequality to linear operator equations*
Eunkyung Ahn*, Kyungpook National University,
Yongdo Lim, Kyungpook National University [AN II-6]

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- 17:20 – 18:20 Chair: Jong Kyu Kim(Kyungnam University)
- 17:20 *Higher order weighted geometric mean of positive definite operators*
Hosoo Lee*, Kyungpook National University,
Yongdo Lim, Kyungpook National University,
Takeaki Yamazaki, Kanagawa University [AN II-7]

17:40 *On a new construction of geometric mean of 4-operators*

Changdo Jung*, Kyungpook National University,
Hosoo Lee, Kyungpook National University,
Takeaki Yamazaki, Kanagawa University

[AN II-8]

18:00 *Some properties of class A operators*

Sungeun Jung*, Ewha Womans University,
Eungil Ko, Ewha Womans University,
Mee-Jung Lee, Ewha Womans University

[AN II-9]

GE. Geometry

December 18 (Fri.)

Room : B143

15:50 – 16:30 Chair: Young Ho Kim(Kyungpook National University)

15:50 *The Butterfly Theorem in projective space*
 Greg Markowsky, POSTECH [GE-1]

16:10 *Yang-Mills induced connections*
 Joon-Sik Park, Pusan University of Foreign Studies [GE-2]

 16:40 – 17:20 Chair: Seoung Dal Jung(Jeju National University)

16:40 *Left-invariant strongly normal unit vector fields on semi-direct product Lie group*
 $\mathbb{R}^n \rtimes_{\rho} \mathbb{R}$
 Seunghun Yi, Youngdong University [GE-3]

17:00 *Real hypersurfaces in complex two-plane Grassmannians with recurrent shape operator*
 Seonhui Kim*, Kyungpook National University,
 Hyunjin Lee, Kyungpook National University,
 Hae Young Yang, Kyungpook National University [GE-4]

TO. Topology

December 18 (Fri.)

Room : B143

17:30 – 18:10 Chair: Yanghyun Byun(Hanyang University)

17:30 *On approximations by points, submaximality and nodec*

Myung Hyun Cho, Wonkwang University,

Junhui Kim*, Wonkwang University,

Mi Ae Moon, Wonkwang University

[TO-1]

17:50 *On the same N-type conjecture for CW-spaces*

Dae-Woong Lee, Chonbuk National University

[TO-2]

AM I. Applied Mathematics I

December 18 (Fri.)

Room : B139

 15:00 – 16:00 Chair: Hyun-Min Kim(Pusan National University)

15:00 *Generating new frames in $L^2(\mathbb{R})$ by convolutions*
 Kil Hyun Kwon, National Institute for Mathematical Sciences/KAIST,
 Dae Gwan Lee*, KAIST,
 Gang Joon Yoon, National Institute for Mathematical Sciences [AM I-1]

15:20 *Iregular sampling on shift invariant spaces*
 Kil Hyun Kwon, KAIST,
 Jaekyu Lee*, KAIST [AM I-2]

15:40 *Reconstruction of functions in shift invariant sapces from local averages*
 Sinuk Kang*, KAIST,
 Kil-hyun Kwon, National Institute for Mathematical Sciences/KAIST [AM I-3]

 16:10 – 17:10 Chair: Kwang Ik Kim(POSTECH)

16:10 *Theoretical analysis and model based simulation to resolve the cause of POSCO new harbor hazards*
 Prashant Kumar*, POSTECH,
 Kwang Ik Kim, POSTECH [AM I-4]

16:30 *Existence of nonlinear boundary layer solution to the Boltzmann equation with diffuse boundary condition*
 Qianzhu Tian, Joint Advanced Research Center of USTC/City University of Hong Kong [AM I-5]

16:50 *Invertibility of a Hankel-type matrix and its application to inverse problems*
 Yun-Sung Chung*, Ewha Womans University,
 Soon-Yeong Chung, Sogang University [AM I-6]

 17:20 – 18:00 Chair: Soon-Yeong Chung(Sogang University)

17:20 *Gevrey regularity of solutions to the spatially homogeneous Boltzmann equation for non Maxwellian molecules without angular cutoff*
 Shi you Lin, University of Science and Technology of China [AM I-7]

17:40 *The existence of solution of p -Schrödinger equations on finite networks*
 Heesoo Lee*, Sogang University,
 Soon-Yeong Chung, Sogang University [AM I-8]

AM II. Applied Mathematics II

December 18 (Fri.)

Room : B138

15:00 – 16:00 Chair: Young-Ho Ahn(Mokpo National University)

15:00 *A multiscale correction to the Black-Scholes model*
J.-H. Kim, Yonsei University,
J.-W. Lee*, Yonsei University,
S.-P. Zhu, University of Wollongong [AM II-1]

15:20 *An optimal portfolio model with stochastic volatility and stochastic interest rate*
Eunjung Noh*, Yonsei University,
Jeong-Hoon Kim, Yonsei University [AM II-2]

15:40 *Pricing under delayed stochastic volatility*
Min Ku Lee, Yonsei University [AM II-3]

16:10 – 17:10 Chair: Chang-Ock Lee(KAIST)

16:10 *Solving a quadratic matrix equation by Newton's method*
Yin-Huan Han*, Pusan National University,
Hyun-Min Kim, Pusan National University [AM II-4]

16:30 *Local boundary element method based finite difference and its numerical simulation*
Xiangfan Piao*, Kyungpook National University,
Sangdong Kim, Kyungpook National University,
Philsu Kim, Kyungpook National University [AM II-5]

16:50 *Pricing the path-dependent options via binomial tree method in jump-diffusion models*
Seung Kyu Lee*, POSTECH,
Kwang Ik Kim, POSTECH [AM II-6]

17:20 – 18:20 Chair: Sungkwon Kang(Chosun University)

17:20 *L^2 error estimates of the extrapolated Crank-Nicolson discontinuous Galerkin approximations for nonlinear Sobolev equations*
Mi-Ray Ohm, Dongseo University,
Jun-Yong Shin, Pukyong National University,
Hyun-Young Lee*, Kyungsoo University [AM II-7]

- 17:40 *An ADI orthogonal spline collocation methods for parabolic partial integro-differential equations*
Amiya Kumar Pani, Industrial Mathematics Group,
Graeme Fairweather*, Mathematical Reviews, American Mathematical Society,
Ryan I. Fernandes, The Petroleum Institute [AM II-8]
- 18:00 *Advanced FEM for electric fields near triple junctions*
Gahyung Jo*, Yonsei University,
Seong-Kwan Park, Yonsei University,
Hi Jun Choe, Yonsei University [AM II-9]

AM III. Applied Mathematics III

December 18 (Fri.)

Room : B137

- 15:00 – 16:00 Chair: Jungho Yoon(Ewha Womans University)
- 15:00 *Discrete nonlinear operators and digital image processing*
 Jea-Hyun Park*, Sogang University,
 Soon-Yeong Chung, Sogang University [AM III-1]
- 15:20 *Null controllability of a reaction-diffusion system by one control force*
 Sakthivel Kumarasamy*, Yonsei University,
 Jeong-Hoon Kim, Yonsei University [AM III-2]
- 15:40 *Fault accommdation of a submersible vehicle using pseudoinverse method*
 Inseok Yang, Kyungpook National University [AM III-3]

IS. Mathematics for Information Sciences

December 18 (Fri.)

Room : B137

16:10 – 16:50

Chair: Seog-Jin Kim(Konkuk University)

16:10 *On some inequalities on the eigenvalues of a distance-regular graph*Hyonju Yu*, POSTECH,
J. H. Koolen, POSTECH,
Jongyook Park, POSTECH

[IS-1]

16:30 *Algorithms for nonnegative matrix and tensor factorizations*Jingu Kim*, Georgia Institute of Technology,
Krishnakumar Balasubramanian, Georgia Institute of Technology,
Haesun Park, Georgia Institute of Technology

[IS-2]

17:00 – 17:40

Chair: Gi-Sang Cheon(Sungkyunkwan University)

17:00 *An analysis of the singular values from the sound information with its preserver and patternization*Duk-Sun Kim*, Sungkyunkwan University,
Sang-Gu Lee, Sungkyunkwan University

[IS-3]

17:20 *Simulation in different dimensions*

Samia Jones, Texas A & M University at Qatar

[IS-4]

PS. Probability and Statistics

December 18 (Fri.)

Room : B151

15:00 – 15:40 Chair: Sangyeol Lee(Seoul National University)

15:00 *Limsup results and LIL for an LPQD sequence*
Yong-Kab Choi, Gyeongsang National University [PS-1]

15:20 *Regression analysis in failure time mixture models with change points according to thresholds in a covariate*
Jimin Lee*, University of North Carolina Asheville,
Thomas H. Scheike, University of Copenhagen,
Yanqing Sun, University of North Carolina at Charlotte [PS-2]

15:50 – 16:30 Chair: Sungchul Lee(Yonsei University)

15:50 *Confidence bands for the difference of two survival functions under the additive risk model*
Seungeun Hyun*, University of South Carolina Upstate,
Jimin Lee, University of North Carolina Asheville [PS-3]

16:10 *Two-sided estimates on Dirichlet heat kernels for time-inhomogeneous non-symmetric diffusions with singular drifts in $C^{1,\alpha}$ -domains*
Sungwon Cho, Yonsei University,
Panki Kim, Seoul National University,
Hyein Park*, Seoul National University [PS-4]

ME. Mathematics Education

December 18 (Fri.)

Room : B151

16:40 – 17:00

Chair: Seonja Kim(Chungwoon University)

16:40 *A study on the awareness of teachers for the gifted education using technology*

Heon Soo Lee*, Chonnam National University,
Jong Youll Park, Chonnam National University

[ME-1]

17:00 – 17:20

Chair: Hyung-Bin Park(Mokpo National University)

17:00 *Applications of newly developed excel graphers in mathematics education and mathematical modeling*

Kyung-Won Kim*, Sungkyunkwan University,
Sang-Gu Lee, Sungkyunkwan University

[ME-2]

17:30 – 17:50

Chair: Seonja Kim(Chungwoon University)

17:30 *The art of seven circles pattern*

Hongtaek Hwang, Kumoh Insitute of Technology,
So-Yeong Choi *, Ineui Elementary School,
Jitae Oh, Kumoh Insitute of Technology

[ME-3]

Poster Sessions

P I. Poster Session

December 16 (Wed.)

Room : Lobby between B140 and B141

13:00 – 14:20

- 13:00 *Mathematicians card and poster*
Sang-Gu Lee, Sungkyunkwan University,
Duk-Sun Kim, Sungkyunkwan University,
Kyung-Won Kim*, Sungkyunkwan University,
Rae-Young Ko, Sungkyunkwan University [P I-1]
- 13:00 *About two dimensional Riemann problem*
Jin-Ah Hwang*, Korea University,
Woonjae Hwang, Korea University [P I-2]
- 13:00 *Vector variational-like inequality problem and vector optimization problem*
B. S. Lee, Kyungsung University [P I-3]
- 13:00 *Iterative algorithm for a new system of generalized set-valued quasi-variational-like inclusions*
Jae Ug Jeong*, Dongeui University,
Soo Hwan Kim, Dongeui University [P I-4]
- 13:00 *Note on the Lebesgue-Radon-Nikodym theorem with respect to p -adic measures*
Taekyun Kim, Kwangwoon University [P I-5]
- 13:00 *Tri-trophic models under random perturbation*
Junpyo Park, Kyungpook National University [P I-6]

P II. Poster Session

December 18 (Fri.)

Room : Lobby between B140 and B141

11:00 – 12:30

- 11:00 *Compressible multi species multi phase flow models*
Hyeonseong Jin, Jeju National University [P II-1]
- 11:00 *On special conformally flat spaces*
Jin hyuk Choi*, Kyung Hee University,
Byung Hak Kim, Kyung Hee University,
Sang Deok Lee, Dankook University,
Young Ok Lee, Chungbuk National University [P II-2]
- 11:00 *A treatment of contact discontinuities*
Jeong Yoon Park*, Korea University,
Woonjae Hwang, Korea University [P II-3]
- 11:00 *New primal-dual interior IPMs for $P_*(k)$ LCPs*
Gyeong-Mi Cho, Dongseo University,
You-Young Cho*, Pusan National University,
Jin-Hee Jin, Pusan National University [P II-4]
- 11:00 *Double cover quasigroups of permutations*
Bokhee Im*, Chonnam National University,
Ji-Young Ryu, Chonnam National University [P II-5]
- 11:00 *A note on boundedness of the solutions of stochastic differential delay equations*
Young-Ho Kim, Changwon National University [P II-6]