2018
International Conference of
HONAM–YOUNGNAM
Mathematical Societies

June 21 (Thu) – June 24 (Sun), 2018
Seogwipo KAL Hotel, Jeju, Korea

Hosted by

Honam Mathematical Society
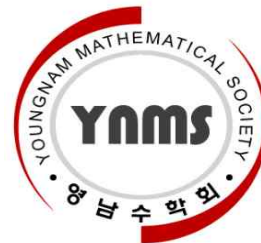Youngnam Mathematical Society

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Institute of Mathematical Science, Chonnam National University
Institute of Mathematical Science, Jeju National University
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Korean Federation of Science and Technology Societies

Sponsored by

Korean Mathematical Society
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2018 Jeju International Conference of Honam-Youngnam Mathematical Societies

June 21(Thr) - 24(Sun), 2018

Seogwipo KAL Hotel, Jeju Island, Korea

http://amath.jnu.ac.kr/hy2018/

Seung Ho Ahn

President of Honam Mathematical Society

Hello! I deeply appreciate everyone who attends the 2018 International Conference of Honam-Youngnam Mathematical Societies. I thank Hyang-Sook Lee, the president of Korean Mathematical Society, Eunok Jung, the president of Korean societies of Industrial and Applied Mathematics, Soon-Yeong Chung, the president of National Institute for Mathematical Sciences, Yong-Hoon Lee, the president of Division of Natural Sciences in National Research Foundation of Korean for Foundation of Korean for helping this conference as Scientific Committee.

Also, I would like to express my gratitude to professor Greenless, John and professor Gumam, Poom who give plenary talks, and 16 invited speakers, and 122 division speakers.

There are lots of places to visit in Jejudo which is designated Special Tourist Zone by the government, and you can join an excursion on Sunday if you want to keep unforgettable memories about the beautiful Jeju Island.

Honam and Youngnam Mathematical Societies are two of the four branch Societies of Korean Mathematical Societies. The four branch Societies have general meetings and conferences annually. Honam and Youngnam Mathematical Societies decided to have joint conference at Jeju in 2018. I hope that not only academic exchanges but also friendships of two Societies will have a positive effect through this conference.

In the era of 4th Industrial Revolution, the role of Mathematics is increasing. A significant number of members of both Societies are conducting research projects about Industrial Mathematics. I hope that the awareness about Mathematics is renewed with good performance of their research.

Industrial Mathematics Center of Pusan National University sponsored financially for this conference. I give my gratitude to Hyunmin Kim, the director of the Center and the co-chair of the conference. I would like to thank Byoung-Chun Shin, the co-chair of the conference, Seung Dal Jung, a professor of Department of Mathematics in Jeju National University and also vice president of Honam Mathematical Society, and Donghi Lee and Sungmo Kang who are executive directors of Youngnam and Honam Mathematical Societies respectively. I thank all of who helps for the conference in many ways.

Thank you very much.

June 2018

Sang Youl Lee

President of the Youngnam Mathematical Society

Welcome to Jeju for HYMS 2018 International Conference

It is a great pleasure and honor for me to welcome all of you to the 2018 International Conference of the Honam-Youngnam Mathematical Societies and to the beautiful island Jeju. This conference brings together participants from all areas of mathematics and various application areas and is the first joint international conference hosted by Honam Mathematical Society and Youngnam Mathematical Society. It plans to have the 7 academic sessions consisting of the areas of algebra, analysis, geometry, topology, applied mathematics, mathematical education, and industrial and applied mathematics as a special session. The scientific program delivers the total 122 lectures (2 plenary lectures, 16 invited lectures and 104 contributed talks) and the social events include special talk by Sang Dong Kim (the president of Kyungpook National University), public lecture by Hyun-Min Kim (the director of IMC at Pusan National Univeristy), HMS and YMS Annual Meetings, banquet, and discussion for the cooperation of Honam and Youngnam Mathematical Societies in the future. Up to now 216 participants from 14 countries in the world have registered.

I greatly expect that you can enjoy your participation in the 2018 International Conference of the Honam-Youngnam Mathematical Societies! During the conference, you will gather to learn the recent achievements and new problems on modern mathematics, to explore the future of the 4th industrial revolution and the roles of mathematics, to contribute your knowledge, to renew acquaintances and to make new friends. I hope that the conference also help promoting the academic exchange and the friendship among researchers on your research areas and related topics. In addition to the academic activities, you will also enjoy the so beautiful nature of Jeju island, history and culture. Jeju is the largest island in Korea, which was designated as a Biosphere Reserve by UNESCO in 2002, a World Natural Heritage site in 2007, followed by a Global Geopark in 2010, proving its value by becoming the only place on Earth to receive all three UNESCO designations in natural sciences.

Now I should mention that this conference is financially supported by several institutes and many of personal research grants from National Research Foundation of Korea. I'd like to give very special thank to such valuable supports. Also, I'd like to express my sincere gratitude to scientific committee, organizing committee, session organizers, speakers and other participants, in particular, foreign participants for traveling far distance to attend this conference. The time has come to open this conference. Again, welcome to the 2018 International Conference of the Honam-Youngnam Mathematical Societies! Best wishes to you for a fruitful and pleasant stay in Jeju.

Time Schedule		
Day 1 - June 21st (Thursday)		Main Venue: B1F(Rose), KAL Hotel
Time	**Program**	**Chair**
16:00 - 17:00	Registration	
17:00 - 18:00	Public Lecture (in Korean) / 4차산업혁명에 수학은 어디에 있나요? Kim, Hyun-Min (Director of F2MIMC, Pusan National University)	Shin, Byeong-Chun (Chonnam National University)
Day 2 - June 22nd (Friday)		Main Venue: B1F(Diamond)
Time	**Program**	**Chair**
08:30 - 17:00	Registration	
09:10 - 10:10	Graduate Students Sessions I — Algebra I	B2F(Emerald)
	Analysis I	1F(Crystal)
	Topology I	B2F(Sapphire)
	Applied Mathematics I	B1F(Diamond)
	Special Session (Industrial and Applied Mathematics) I	B1F(Rose)
10:10 - 10:30	Break	
10:30 - 10:50	Opening Remarks / Ahn, Seung Ho (President of HMS) Lee, Sang Youl (President of YMS)	Kang, Sungmo (Chonnam National University)
	Congratulatory Remarks / Lee, Hyangsook (President of KMS) Chung, Soon-Yeong (President of NIMS)	
10:50 - 11:00	Break	
11:00 - 11:50	Plenary Lecture I / Invariants of spaces with an action of a compact Lie group Greenlees, J.P.C. (Warwick University, United Kingdom)	Lee, Dae-Woong (Chonbuk National University)
11:50 - 13:30	Lunch (Restaurant Seogwipoheukdon, outside KAL Hotel)	
13:30 - 14:20	Plenary Lecture II / Fixed point methods for solving convex optimization problem with application to image restoration problem Kumam, Poom (King Mongkut's University of Technology Thonburi, Thailand)	Kim, Hyun-Min (Pusan National University)
14:20 - 14:30	Conference Photo	
14:30 - 14:50	Break	
14:50 - 16:20	Contributed Talk Sessions I — Algebra I	B2F(Emerald)
	Analysis I	1F(Crystal)
	Topology I	B2F(Sapphire)
	Geometry I	B1F(Rose)
	Applied Mathematics I	B1F(Diamond)
16:20 - 16:40	Break	
16:40 - 18:10	Contributed Talk Sessions II — Algebra II	B2F(Emerald)
	Analysis II	1F(Crystal)
	Topology II	B2F(Sapphire)
	Geometry II	B1F(Rose)
	Applied Mathematics II	B1F(Diamond)
18:10 - 18:30	Break	
18:30 - 18:40	Special Talk (in Korean) / 제4차 산업혁명시대의 대학 교육과 연구 Kim, Sang Dong (President of Kyungpook National University)	Kim, Yeansu (Chonnam National University)
18:40 - 20:30	Banquet (B1F Diamond, KAL Hotel)	

Day 3 - June 23rd (Saturday)			Main Venue: B1F(Diamond)
Time	**Program**		**Chair**
09:00 - 12:00	Registration		
09:00 - 10:30	Contributed Talk Sessions III	Algebra III	B2F(Emerald)
		Analysis III	1F(Crystal)
		Geometry III	B2F(Sapphire)
		Applied Mathematics III	B1F(Diamond)
		Mathematics Education I	B1F(Rose)
10:30 - 10:50	Break		
10:50 - 12:20	Contributed Talk Sessions IV	Algebra IV	B2F(Emerald) (10:50 - 11:30)
		Analysis IV	1F(Crystal)
		Topology III	B2F(Sapphire)
		Applied Mathematics IV	B1F(Diamond)
		Mathematics Education II	B1F(Rose)
		Special Session (Industrial and Applied Mathematics) I	B2F(Emerald) (11:40 - 12:20)
12:20 - 14:00	Lunch (KAL Hotel)		
14:00 - 15:30	Contributed Talk Sessions V	Analysis V	1F(Crystal)
		Topology IV	B2F(Sapphire)
		Geometry IV	B2F(Emerald)
		Applied Mathematics V	B1F(Diamond)
		Special Session (Industrial and Applied Mathematics) II	B1F(Rose)
15:30 - 15:50	Break		
15:50 - 16:50	Graduate Students Sessions II	Algebra II	B2F(Emerald)
		Analysis II	1F(Crystal)
		Topology II	B2F(Sapphire)
		Applied Mathematics II	B1F(Diamond)
		Special Session (Industrial and Applied Mathematics) II	B1F(Rose)
16:50 - 17:10	Break		
17:10 - 17:50	HMS, YMS Prize Lectures	2018 HMS Prize Lecture Cho, Yonggeun (Chonbuk National University)	Kang, Sungmo (Chonnam Nat'l University) 1F(Crystal)
		2017 YMS Prize Lecture Kim, Jong Kyu (Kyungnam Unversity)	Choi, Junesang (Dongguk University) B1F(Diamond)
17:50 - 18:30	HMS, YMS Annual Meeting	HMS Annual Meeting	1F(Crystal)
		YMS Annual Meeting	B1F(Diamond)

Day 4 - June 24th (Sunday)		Main Venue: B1F(Diamond)
Time	**Program**	**Chair**
09:00 - 12:00	Discussion for the cooperation of Honam and Youngnam Mathematical Societies	

Session Schedule

Algebra

Date	Time	Program	Place
June 22 (Fri)	09:10 - 10:10	Graduate Students Session I	B2F (Emerald)
	14:50 - 16:20	Contributed Talk Session I	
	16:40 - 18:10	Contributed Talk Session II	
June 23 (Sat)	09:00 - 10:30	Contributed Talk Session III	
	10:50 - 11:30	Contributed Talk Session IV	
	15:50 - 16:50	Graduate Students Session II	

Analysis

Date	Time	Program	Place
June 22 (Fri)	09:10 - 10:10	Graduate Students Session I	1F (Crystal)
	14:50 - 16:20	Contributed Talk Session I	
	16:40 - 18:10	Contributed Talk Session II	
June 23 (Sat)	09:00 - 10:30	Contributed Talk Session III	
	10:50 - 12:20	Contributed Talk Session IV	
	14:00 - 15:30	Contributed Talk Session V	
	15:50 - 16:50	Graduate Students Session II	

Applied Mathematics

Date	Time	Program	Place
June 22 (Fri)	09:10 - 10:10	Graduate Students Session I	B1F (Diamond)
	14:50 - 16:20	Contributed Talk Session I	
	16:40 - 18:10	Contributed Talk Session II	
June 23 (Sat)	09:00 - 10:30	Contributed Talk Session III	
	10:50 - 12:20	Contributed Talk Session IV	
	14:00 - 15:30	Contributed Talk Session V	
	15:50 - 16:50	Graduate Students Session II	

Geometry

Date	Time	Program	Place
June 22 (Fri)	14:50 - 16:20	Contributed Talk Session I	B1F (Rose)
	16:40 - 18:10	Contributed Talk Session II	
June 23 (Sat)	09:00 - 10:30	Contributed Talk Session III	B2F (Sapphire)
	14:00 - 15:30	Contributed Talk Session V	B2F (Emerald)

Mathematics Education

Date	Time	Program	Place
June 23 (Sat)	09:00 - 10:30	Contributed Talk Session III	B1F (Rose)
	10:50 - 12:20	Contributed Talk Session IV	

Topology

Date	Time	Program	Place
June 22 (Fri)	09:10 - 10:10	Graduate Students Session I	B2F (Sapphire)
	14:50 - 16:20	Contributed Talk Session I	
	16:40 - 18:10	Contributed Talk Session II	
June 23 (Sat)	10:50 - 12:20	Contributed Talk Session IV	
	14:00 - 15:30	Contributed Talk Session V	
	15:50 - 16:50	Graduate Students Session II	

Special Session: Industrial and Applied Mathematics

Date	Time	Program	Place
June 22 (Fri)	09:10 - 10:10	Graduate Students Session I	B1F (Rose)
June 23 (Sat)	11:40 - 12:20	Contributed Talk Session IV	B2F (Emerald)
	14:00 - 15:30	Contributed Talk Session V	B1F (Rose)
	15:50 - 16:50	Graduate Students Session II	

		* Invited Talk

Algebra

Time (Place)		Chair
June 22 (Friday)		
09:10 - 10:10 (Emerald)	Factorization theory in generalized composite Hurwitz rings Kim, Dong Kyu (Kyungpook National University)	Lim, Jung Wook (Kyungpook National University)
	Construction of a non-residually finite group as a direct limit of relatively hyperbolic groups Kim, Jan (Pusan National University)	
	Some identities of derangement numbers arising from differential equations Kwon, Hyuck-In (Kwangwoon University)	
	Note on w-SFT-rings Kwon, Minjae (Kyungpook National University)	
10:10 - 14:50	Break	
14:50 - 16:20 (Emerald)	**Generalized Weyl algebra and its related topics*** **Nam, Ki- bong (University of Wisconsin, USA)**	Im, Bokhee (Chonnam National University)
	Direct Sum Decompositions of Indecomposable Injective Submodules Lee, Sang Cheol (Chonbuk National University)	
	Extremal line bundles on a smooth curve Choi, Youngook (Yeungnam University)	
16:20 - 16:40	Break	
16:40 - 18:10 (Emerald)	**Menon type identities*** **Li, Yan (China Agricultural University, China)**	Lee, Sang Cheol (Chonbuk National University)
	Approximate Orthogonal Latin Mates Im, Bokhee (Chonnam National University)	
	Some characterizations of degenerate q-Daehee polynomials and numbers of the third kind Jang, Lee-Chae (Konkuk University)	
June 23 (Saturday)		
09:00 - 10:30 (Emerald)	A new q-extension of Euler polynomial of the second kind and some related polynomials Kang, Jung Yoog (Anyang University)	Kim, Yonggu (Chonnam National University)
	Euler totient function and Mobius divisor functions Kim, Daeyeoul (Chonbuk National University)	
	On rings with S-Noetherian spectrum Lim, Jung Wook (Kyungpook National University)	
	Q-energetic subsets and permeable Q-values in BCI-algebras Roh, Eun Hwan (Chinju National University of Education)	
10:30 - 10:50	Break	
10:50 - 11:30 (Emerald)	Minimal number of Frobenius elements of G_{K,S} whose conjugacy classes generate the whole group G_{K,S} Kim, Kwang-Seob (Chosun University)	Roh, Eun Hwan (Chinju National University of Education)
	Eigenspaces of max-plus matrices Kim, Yonggu (Chonnam National University)	
11:30 - 15:50	Break	
15:50 - 16:50 (Emerald)	Evaluating binomial convolution sums of divisor functions in terms of Euler and Bernoulli polynomials Park, Ho (Chonbuk National University)	Kim, Kwang-Seob (Chosun University)
	An inserting property of Armendariz and NI properties Li, Dan (Pusan National University)	
	A study of sum of divisor function and stirling number of the first kind derived from Lioville functions So, Ji-suk (Chonbuk National University)	
	Defining equations of rational curves in smooth quadric surface Yang, Shuailing (Pukyong National University)	

Analysis

Time (Place)	Talk	Chair
June 22 (Friday)		
09:10 - 10:10 (Crystal)	Characterizations for exponentially weighted Bergman spaces Park, Soohyun (Pusan National University) On oblique derivative problem for elliptic equations with dini mean oscillation coefficients Lee, Jihoon (Yonsei University) A Sobolev norm equivalence on Fock-type spaces with a mixed norm Ha, Jeongmin (Pusan National University) A modified CQ algorithm for solving the multiple-sets split feasibility problem and the fixed point problem for nonexpansive mappings Kesornprom, Suparat (University of Phayao, Thailand)	Park, Jihyang (Pukyong National University)
10:10 - 14:50	Break	
14:50 - 16:20 (Crystal)	**Studies after the Beurling theorem*** **Izuchi, Keiji (Niigata University, Japan)** Maximal averages over certain non-smooth and non-convex hypersurfaces Hong, Sunggeum (Chosun University) On the existence of mixed type solutions for Chern-Simons theory Kim, Namkwon (Chosun University)	Lee, Young Joo (Chonnam National University)
16:20 - 16:40	Break	
16:40 - 18:10 (Crystal)	**Some characterizations of a Bloch function on bounded symmetric domains*** **Honda, Tatsuhiro (Senshu University, Japan)** A Coburn type theorem on the Hardy space Lee, Young Joo (Chonnam National University) Symmetry-breaking bifurcation for some equations Sim, Inbo (University of Ulsan)	Choi, Junesang (Dongguk University)
June 23 (Saturday)		
09:00 - 10:30 (Crystal)	**Reducibility for a class of analytic multipliers on the Dirichlet space*** **Chen, Yong (Zhejiang Normal University, China)** Bounded Domains in the Complex Plane Chung, Young-Bok (Chonnam National University) Strict Common Fixed Points of Nonlinear Mappings via δ-Distances and an Application Husain, Mohammed Hasan Zafar (Jazan University, Jazan, Kingdom of Saudi Arabia)	Hong, Sunggeum (Chosun University)
10:30 - 10:50	Break	
10:50 - 12:20 (Crystal)	Summation formulas involving harmonic numbers and generalized harmonic numbers Choi, Junesang (Dongguk University) On coefficient problems for starlike functions and their inverse functions Sim, Youngjae (Kyungsung University) Strong convergence of a self-adaptive method for the split feasibility problem in Banach spaces Cholamjiak, Prasit (University of Phayao) Energy decay rate for the nonlinear hyperbolic equation with some boundaries Kim, Daewook (Seowon University)	Chung, Young-Bok (Chonnam National University)

Analysis

12:20 - 14:00	Break	
14:00 - 15:30 (Crystal)	Linear Estimates for The Commutator of The Hilbert Transform on Weighted Lebesgue Spaces Chung, Daewon (Keimyung University)	Sim, Inbo (University of Ulsan)
	On properties of dual quaternion functions and its applications Kim, Ji Eun (Dongguk University, Gyeongju)	
	Hyponormality of Toeplitz operators on the Fock spaces Lee, Jongrak (Ewha Womans University)	
	Compact differences of composition operators on large weighted Bergman spaces Park, Inyoung (Pusan National University)	
15:30 - 15:50	Break	
15:50 - 16:50 (Crystal)	A New weighted Fock spaces and its explicit Kernel form Choi, Hyunil (Pusan National University)	Kesornprom, Suparat (University of Phayao, Thailand)
	Iterative method for Convergence theorem, Rate of convergence and Speed of continuous real function Duandao, Norawit (University of Phayao)	
	Iterative methods for solving the proximal split feasibility problem Mamat, Manatsawin (University of Phayao)	
	Coefficient estimates for certain analytic functions Park, Jihyang (Pukyong National University)	

Applied Mathematics

Time (Place)	Talk	Chair
June 22 (Friday)		
09:10 - 10:10 (Diamond)	Advanced Mathematical Model of Atopic Dermatitis Kang, Yo Seb (Kyungpook National University) A Compact Finite Difference Scheme for Convection-Diffusion-Reaction Equation Kim, Dongwan (Kyungpook National University) The application of topological method to the analysis of west capital Pyongyangbu map Choi, Q-Heung (Inha University)	Jang, Bongsoo (UNIST)
10:10 - 14:50	Break	
14:50 - 16:20 (Diamond)	**Recent Results and Experiments with Polynomials and Polynomiography*** **Kalantari, Bahman (Rutgers University, USA)** The maximum size of cross-t intersecting families of sets Siggers, Mark (Kyungpook National University) Peak Value Problem Al-Hammali, Hussain (Kyungpook National University)	Siggers, Mark (Kyungpook National University)
16:20 - 16:40	Break	
16:40 - 18:10 (Diamond)	**Some recent developments on a singular predator-prey model*** **Guo, Jong-Shenq (Tamkang University, Taiwan)** Alternate models of fractional orders replicator dynamics Hala, El-Saka (Damietta University) An improvement of MLS-TV denoising method with ADMM algorithm Lee, Yeon Ju (Korea University Sejong Campus)	Kwak, Minkyu (Chonnam National University)
June 23 (Saturday)		
09:00 - 10:30 (Diamond)	Random walks in a sparse random environment Seol, Youngsoo (Dong-A University) Ruin probabilities of multivariate risk models with common shock dependence with regime switching Kim, Jerim (University of Seoul) Stochastic Modeling and Analysis of Connectivity in V2V Networks Kim, Yoora (University of Ulsan) Signed 2-independence number of some digraphs Kim, Hye Kyung (Daegu Catholic University)	Kim, Hye Kyung (Daegu Catholic University)
10:30 - 10:50	Break	
10:50 - 12:20 (Diamond)	FEMs to compute the singular solutions using stress intensity factors Kim, Seokchan (Changwon National University) Numerical simulations of particle advection in a lid driven swirling flow Ryu, Soorok (Kyungpook National University) Numerical Methods for Solving Heat Equation with Discontinuous Diffusion coefficients and its applications Seo, Sat byul (Kyungnam University) On the global existence of a special stretched solutions of MHD equations Lkhagvasuren, Bataa (Chonnam National University)	Kim, Seokchan (Changwon National University)

Applied Mathematics

12:20 - 14:00	Break	
14:00 - 15:30 (Diamond)	Moon Jellyfish bloom near the Masan coastal area Jin, Hong Sung (Chonnam National University)	Jin, Hong Sung (Chonnam National University)
	Multistability in the rock-paper-scissors game Park, Junpyo (UNIST)	
	Slow passage through resonance in fractional system Lee, Seyeon (UNIST)	
	Synchro-Chimera States Yusupova, Aziza (Kyungpook National University)	
15:30 - 15:50	Break	
15:50 - 16:50 (Diamond)	Numerical solutions for the linear convection diffusion equation using compact finite difference scheme Park, Jeonghoon (Kyungpook National University)	Kim, Donghyun (Pusan National University)
	Numerical Comparison for two type of ODE solver Jeon, Yonghyeon (Kyungpook National University)	
	European derivatives with stochastic volatility models Kim, Donghyun (Pusan National University)	

Time (Place)	Talk	Chair
Geometry		
June 22 (Friday)		
14:50 - 16:20 (Rose)	**Affine Translation surfaces in 3-spaces*** **Liu, Huili (Northeastern University, China)**	Jung, Seoung Dal (Jeju National University)
	2-type surfaces satisfying < △x, x - x_0 > =const. Jang, Changrim (University of Ulsan)	
	Slant curves and magnetic curves in Sasakian Lorentzian 3-manifolds Lee, Ji-Eun (Chonnam National University)	
16:20 - 16:40	Break	
16:40 - 18:10 (Rose)	Isometric Reeb flow and contact hypersurfaces in Hermitian symmetric spaces Suh, Young Jin (Kyungpook National University)	Choi, Young-Jun (Pusan National University)
	Riemannian foliations admitting transversal conformal fields Jung, Seoung Dal (Jeju National University)	
	Rigidity of umbilical surfaces in warped product spaces Pyo, Juncheol (Pusan National University)	
	Energy bending curve of hypersurfaces in Lorentzian Space Forms Woo, Changhwa (Woosuk University)	
June 23 (Saturday)		
09:00 - 10:30 (Sapphire)	**Interactions between differential geometry and economic analysis*** **Vilcu, Gabriel-Eduard (University of Bucharest, Romania)**	Lee, Jae Won (Gyoengsang National University
	Variation of Kahler-Einstein metrics Choi, Young-Jun (Pusan National University)	
	Curvature of geodesics and a characterization of de Sitter spaces Kim, Dong-Soo (Chonnam National University)	
10:30 - 14:00	Break	
14:00 - 15:30 (Emerald)	Surface interpolation with prescribed given geodesics and points Lee, Jae Won (Gyoengsang National University)	Woo, Changhwa (Woosuk University)
	Hypersurfaces in Complex quadric with normal Jacobi operator of Codazzi type Kim, Gyu Jong (Kyungpook National University)	
	Parallelism for the shape operator on real hypersurfaces in the complex quadric Lee, Hyunjin (Kyungpook National University)	
	Einstein-like unit tangent sphere bundles Chun, SunHyang (Chosun University)	

Mathematics Education

Time (Place)	Talk	Chair
June 23 (Saturday)		
09:00 - 10:30 (Rose)	Designing discourse with ICT environment that affects reification of function* Ohtani, Minoru (Kanaza University, Japan)	Noh, Jihwa (Pusan National University) Kim, Jin ho (Daegu National University of Education)
	A Study on the Teaching the Concept of the Right Triangle through Classification Activity Kim, JungHoon (Gyeongsang National University)	
	The effects of learner-centerd instruction on students' reasoning ability and achievement Cha, So Jeong (Daegu National University of Education)	
10:30 - 10:50	Break	
10:50 - 12:20 (Rose)	An Analysis of Web-Based Adaptive Math Learning Program Components Ee, Ji Hye (Ajou University)	Huh, Nan (Kyonggi university)
	Teaching Triangle Constructions with Three Located Points in a Classroom Jun, Younbae (Kumoh National Institute of Technology)	
	A study on the method of mathematics education based on Rudolf Steiner anthroposophy education theory Kim, Young-Ok (Kyungnam University)	
	How does video analysis of teaching lead teachers to change? Noh, Jihwa (Pusan National University)	

Time (Place)	Talk	Chair
Topology		

Time (Place)	Talk	Chair
June 22 (Friday)		
09:10 - 10:10 (Sapphire)	Gromov-Hausdorff perturbations of dynamical systems Morales, C.A. (Universidade Federal do Rio de Janeiro, Brazil) Inverse shadowing property for an automorphism on Banach spaces and its relationship with the shadowing property Choi, Jaejoon (Chungnam National University) GH-stability of dynamical systems from measure theoretical viewpoint Dong, Meihua (Chungnam National University) Lyapunov functions on compact metric spaces via Whitney's maps Lee, Hyunhee (Chungnam National University)	Jang, Donghoon (Pusan National University)
10:10 - 14:50	Break	
14:50 - 16:20 (Sapphire)	**Ribbon surface-knot in 4-space*** **Kawauchi, Akio (Osaka City University, Japan)** On the local cohomology spectral sequence for the Brown-Peterson spectrum Lee, Dae-Woong (Chonbuk National University) An enumeration of immersed surface-links Kim, Jieon (Pusan National University)	Cho, Jinseok (Pusan National University of Education)
16:20 - 16:40	Break	
16:40 - 18:10 (Sapphire)	**Cusps and alternating knots*** **Purcell, Jessica (Monash University, Australia)** Dehn surgeries on middle/hyper doubly Seifert twisted torus knots Kang, Sungmo (Chonnam National University) The volume and Chern-Simons invariants of Dehn-filled manifolds Yoon, Seokbeom (Seoul National University)	Kim, Yongkuk (Kyungpook National University)
June 23 (Saturday)		
10:50 - 12:20 (Sapphire)	Two-dimensional braids, their graphical description and application to knot theory* Kamada, Seiichi (Osaka City University, Japan) Fixed points of symplectic circle actions Jang, Donghoon (Pusan National University) A construction of invariants for surface-links via the Homply-pt polynomial Jeong, Suhyeon (Pusan National University)	Lee, Dae-Woong (Chonbuk National University)
12:20 - 14:00	Break	
14:00 - 15:30 (Sapphire)	Some notes on topological and sequential properties of k-metric spaces* Sostak, Alexander (University of Latvia, Latvia) Sullivan's structural stability theorem and Anosov representations Kim, Sungwoon (Jeju National University) Existence of helicoidal translating solitons for the mean curvature flow and their asymptotic behavior Kim, Daehwan (Pusan National University)	Han, Sang-Eon (Chonbuk National University)

Special Session: Industrial and Applied Mathematics

Time (Place)	Talk	Chair
June 22 (Friday)		
09:10 - 11:10 (Rose)	Optimal control problems of mosquito-borne disease subject to changes in feeding behavior of Aedes mosquitoes Kim, Byul Nim (Kyungpook National University) Age-based natural mortality for sandfish in East Sea Cho, Giphil (Pusan National University) Qualitative and Sensitivity Analysis of the Effect of Electronic-cigarettes on Smoking Cessation Jung, Jae Hun (Pusan National University)	Kim, Sangil (Hankuk University of Foreign Studies)
June 23 (Saturday)		
11:40 - 12:30 (Emerald)	A data fitting by using differential equations Kwak, Minkyu (Chonnam National University) A tumor growth inhibition model based on a stochastic process Byun, Jong Hyuk (Pusan National University) Blow-up phenomena for a quasilinear parabolic equation with time-dependent coefficient source under homogeneous Neumann boundary condition Yang, Rui (Pusan National University)	Kwak, Minkyu (Chonnam National University)
12:30 - 14:00	Break	
14:00 - 15:30 (Rose)	Risk assessment models in operating system Ma, Yong-Ki (Kongju National University) Pricing Options with Exponential Levy Neural Network Huh, Jeonggyu (Yonsei University) A scaled version of the double-mean-reverting model for VIX derivatives Jeon, Jaegi (Yonsei University) Ruin probabilities of multivariate risk models with common shock dependence with regime switching Kim, Jerim (University of Seoul)	Yoon, Ji-Hun (Pusan National University)
15:30 - 15:50	Break	
15:50 - 16:50 (Rose)	On the improvement of plate arrangement to reduce loss of labels Park, Jeong Rye (Pusan National University) Oncolytic virus dynamics model with time delay Kim, Kwang Su (Pusan National University) Evaluation method of infection potential of HPAI on a farm Nam, Seong-Uk (Pusan National University)	Park, Jeong Rye (Pusan National University)

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