

CURRICULUM VITAE

(last updated: March 05, 2019)

Meesoon Ha

Associate Professor

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Research Interests

I am interested in the applications of statistical physics in terms of simple minimal model studies with essential features of complex systems. The below research topics are what I am currently involved in:

- **Phase transitions: finite-size scaling and universality class; Fluctuation theorem issues**
- **Kinetic roughening and multifractality in thin film growth processes**
- **Nonequilibrium stochastic processes: Self-organized criticality; Synchronization**
- **Dynamics on and of complex networks: Epidemic process; Social contagion; Neuroscience**
- **Patterns and collective behavior in granular media and/or colloidal particle systems**
- **Random constraint satisfaction (NP-complete) problems: K-SAT and Q-COL**
- **Glass and jamming transitions with dynamic heterogeneity; Disordered systems**

Professional Experience

- 2017.03. - present Associate Professor, Dept. of Physics Education, Chosun University
- 2011.03. - 2017.02. Assistant Professor, Dept. of Physics Education, Chosun University
- 2007 - 2011 BK21 Research Professor, Dept. of Physics
Korea Advanced Institute of Science and Technology (KAIST)
- 2006 - present Associate Member, School of Physics, KIAS
- 2006 - 2007 Brain Korea 21 (BK21) Endowed Professor
Dept. of Physics, Chonbuk National University
- 2003 - 2006 Postdoctoral Research Fellow, School of Physics
Korea Institute for Advanced Study (KIAS)
- 1997 - 2003 RA and TA, Dept. of Physics, University of Washington, U.S.A.
- 1995 - 1996 Part-time Lecturer & Staff of General Physics Lab
- 1993 - 1995 Research Assistant (RA) and Teaching Assistant (TA)
Dept. of Physics, Korea University

Official Visits

- 2018 summer; 2014; 2013; 2012 Prof. Bae-Yeun Ha's group
Dept. of Physics and Astronomy, University of Waterloo, Waterloo, Canada
- 2019.02.06. - 14.; 2018.01.07. - 15.; 2017.01.21. - 27.; 2011.12.28. - 2012.01.20.
Prof. Marcel den Nijs' group
Dept. of Physics and Astronomy, University of Washington, Seattle, U.S.A.
[see <http://faculty.washington.edu/london/index.html>]
- 2008.05.10. - 06.01. *Nordic Institute for Theoretical Physics*, Stockholm, Sweden
"Physics of Distributed Information Systems" (PhysDIS) program and workshop
[see <http://agenda.albanova.se/conferenceDisplay.py?confId=296>]
- 2006.11.06. - 12.01. Prof. M. Paczuski's complexity science group
Dept. of Physics and Astronomy, University of Calgary, Calgary, Canada
[see <http://www.ucalgary.ca/complexity/people/faculty/maya>]
- 2002.12.23. - 2003.01.23. Prof. H. Park's group, School of Physics, KIAS, Korea

Education

- 1997 - 2003 Ph.D. in Physics at the University of Washington, Seattle, U.S.A.
Specialty: Condensed-Matter Theory and Statistical Physics
Ph.D. dissertation with Prof. Marcel den Nijs:
"Scaling and phase transitions in 1D nonequilibrium driven systems"
- 1993 - 1995 M.S. in Physics at Korea University, Seoul, Korea
Specialty: Statistical Physics
M.S. thesis with Prof. In-mook Kim and Prof. Hyunggyu Park:
"Dynamic properties of one-dimensional nonequilibrium interfaces"
- 1989 - 1993 B.S. in Physics at Inha University, Incheon, Korea

Awards and Honors

- 2017.02.23. Best Professor for Class Evaluation in College of Education, Chosun University
- 2016.02.15. & 10.14. ACE Best Teacher at Fall 2015 & Spring 2016, Chosun University
- 2010.09.28. "Marquis Who's Who in the World 2011 (28th edition)" Selection & Inclusion
- 2010.04.21. Yong-Bong Prize (under 40-year-old stat. physicist) at Korean Physical Society
- 2001 Full scholarship at International Summer School (FPSPX), Altenberg, Germany
- 1994.03.26. & 09.10. Baekwoon private fellowships at Korea University, Seoul, Korea
- 1990 - 1992 Honor student scholarships at Inha University, Incheon, Korea

Professional Memberships and Activities

- Chairperson, Dept. of Physics Education at Chosun University, March 2017 - February 2019
- Editor, New Physics: Sae Mulli (KPS), May 2016 - April 2019; extended April 2022
- Appointed Admission Interviewer at Chosun University, 2013 - present
- Member of Local Organizing Committee, STATPHYS 25, July 22 - 26, 2013
- Reviewer, National Research Foundation (NRF - Korea) proposal since 2010
- Appointed Admission Interviewer at KAIST, 2009 & 2010
- Referee, JKPS, PRL, PRE since 2007; JSTAT since 2008; CEJP, Phys. Lett. A, EPL since 2010; EPJB since 2015; Scientific Report since 2016; Aerospace and Sustainability since 2018
- Reviewer, National Science Foundation (NSF - U.S.A.) proposal since 2007
- Member, Molecular Dynamics simulation Research Group (MDRG) since 2007
- Member, 2030 Kangwon Frontier Brain (youngman) Group since 2007
- Member, The American Physical Society since 1997 (Northwest section since 1998)
- Member, The Korean Physical Society since 1994 (Division of Statistical Physics since 2003)
- Mentor, 1st year physics graduate students at the University of Washington (UW), 2002 - 2003
- Volunteer and member, The CDO for Physicists and Astronomers at the UW, 2001 - 2003

Grants

- * National Research Foundation (NRF) of Korea, grant funded by the Korean government for *Qualified Scientists in Local Universities* for 3 years (June 2014 - May 2017; extended until May 2020).
for *Female Scientists* - since May 2011 for 3 years (May 2011 - April 2014).
- * Chosun University Research Fund (April 2011 - March 2012; 2013; July 2018 - June 2019).

Computer Skills

- Extensive knowledge: Unix, Linux, Windows/OS2, C/C++, LaTeX, Gnuplot, Xfig
- Working knowledge: Mathematica, Origin, Fortran, HTML, MacOS, MS Office
- Familiar with: MatLab, Maple, Photoshop, Xmgrace

Personal Data

- Date and Place of Birth: December 07, 1970, Seoul, Korea (ROK)
- Languages: Fluent in Korean and American English ● Marital status: Married, One child

List of Publications

(last updated: March 05, 2019)

Journal articles, preprints, and in preparation

(in preparation)

- [46] "Scaling Properties of Sign Phase Transitions"
Y. Baek, M. Ha, H. Park, and M. den Nijs (in preparation)
- [45] "Role of initial conditions in dynamic scaling analysis of synchronization",
W. Kwak, C. Choi, and M. Ha (in preparation)

(in revision/pending)

- [44] Comment on "Fluctuation theorem for hidden entropy production",
Y. Baek, M. Ha, H. Jeong, and H. Park (in revision; arXiv:1402.1235v3)
- [43] "Nonlinear stability of phase-locked states for the Kuramoto model with finite inertia",
Y.-P. Choi, C. Choi, M. Ha, S.-Y. Ha (in revision; arXiv:1112.2763v1)
- [42] "Role of power-law type long-term memory in the contact process",
M. Ha, S. Kwon, H.S. Park, and H. Park (KIAS preprint)

(to be submitted soon)

- [41] "Inertial effect on synchronization of globally coupled oscillators",
C. Choi and M. Ha (to be submitted)
- [40] "Role of Bias in Generalized Contact Process with Lifetime",
M. Ha (to be submitted)
- [39] "Passive slider statistics on one-dimensional nonlinear growing interfaces",
H. Soh, M. Ha, and H. Jeong (to be submitted)

(submitted/accepted)

- [38] "Two-dimensional conserved lattice gas with thermal noise",
W. Kwak and M. Ha (submitted to XXXX)

(published journal articles)

- [37] "Role of hubs in the synergistic spread of behavior",
Y. Baek, K. Chung, M. Ha, H. Jeong, and D. Kim [**Physical Review E** 99, 020301(R) (2019)]
- [36] "Dynamic topologies of activity-driven temporal networks with memory",
H. Kim, M. Ha, and H. Jeong [**Physical Review E** 97, 062148 (2018)]
- [35] "Role of Cutoff Scaling in Scale-Free Networks",
M. Ha [**New Physics: Sae Mulli** 68, 563 (2018)]
- [34] "Jamming and condensation in one-dimensional driven flow",
H. Soh, M. Ha, and H. Jeong [**Physical Review E** 97, 032120 (2018)]
- [33] "Finite-Size Scaling in q -Coloring Problems",
M. Ha [**New Physics: Sae Mulli** 67, 1023 (2017)]
- [32] "Effects of a local defect on one-dimensional nonlinear surface growth",
H. Soh, Y. Baek, M. Ha, and H. Jeong [**Physical Review E** 95, 042123 (2017)]
- [31] "Generalized Conserved Lattice Gas on Random Networks",
W. Kwak, S. Park, and M. Ha [**New Physics: Sae Mulli** 66, 1210 (2016)]

- [30] "Universality classes of generalized epidemic process on random networks",
K. Chung, Y. Baek, M. Ha, H. Jeong [Physical Review E **93**, 052304 (2016)]
- [29] "Scaling properties in time-varying networks with memory",
H. Kim, M. Ha, and H. Jeong [Eur. Phys. J. B **88**, 315 (2015)]
- [28] "Spatial Correlations and Extended Self-Similarity Properties in Sandpiles",
M. Ha [New Physics: Sae Mulli **65**, 1009 (2015)]
Selected Highlight Paper
- [27] "Effects of junctional correlations in the TASEP on random regular networks",
Y. Baek, M. Ha, and H. Jeong [Physical Review E **90**, 062111 (2014)]
- [26] "Dynamic Scaling Analysis of Critical Behaviors in Nonequilibrium Processes",
M. Ha [New Physics: Sae Mulli **64**, 819 (2014)]
- [25] "Generalized epidemic process on modular networks",
K. Chung, Y. Baek, D. Kim, M. Ha, and H. Jeong [Physical Review E **89**, 052811 (2014)]
- [24] "Expansion dynamics of a self-avoiding polymer in a cylindrical pore",
Y. Jung, C. Jeon, M. Ha, and B. Ha [EPL, **104** (2013) 68003]
- [23] "Extended finite-size scaling of synchronized coupled oscillators",
C. Choi, M. Ha, and B. Kahng [Physical Review E **88**, 032126 (2013)]
- [22] "Stochastic Local Search in Random Constraint Satisfaction Problems",
M. Ha [New Physics: Sae Mulli **63**, 995 (2013)]
- [21] "Impact of sequential disorder on the scaling behavior of airplane boarding time",
Y. Baek, M. Ha, and H. Jeong [Physical Review E **87**, 052803 (2013)]
- [20] "Numerical Study of Synchronization in the Kuramoto Model with Finite Inertia",
C. Choi and M. Ha [New Physics: Sae Mulli **62**, 958 (2012)]
Selected Highlight Paper
- [19] "Fundamental Structural Constraint of Random Scale-Free Networks",
Y. Baek, D. Kim, M. Ha, and H. Jeong [Physical Review Letters **109**, 118701 (2012)]
- [18] "Kinetic roughening in polymer thin film growth",
M. Ha [Physics Procedia **64** (2012) pp. 44-48]
- [17] "Absorbing states of zero-temperature Glauber dynamics in random networks",
Y. Baek, M. Ha, and H. Jeong [Physical Review E **85**, 031123 (2012)]
- [16] "Effect of Blockage on Driven Flow with Periodic Boundary Conditions",
M. Ha [New Physics: Sae Mulli **61**, 909 (2011)]
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- [15] "Finite-size scaling in random K -satisfiability problems (K-SAT)",
S.H. Lee, M. Ha, C. Jeon and H. Jeong [Physical Review E **82**, 061109 (2010)]
- [14] "Universality classes and crossover behaviors in non-Abelian directed sandpiles",
H.-H. Jo and M. Ha [Physical Review E **82**, 041101 (2010)]
- [13] "Critical behavior of Ising model in annealed scale-free networks",
S.H. Lee, M. Ha, H. Jeong, J.D. Noh, and H. Park [Physical Review E **80**, 051127 (2009)]
- [12] "Instability transitions and ensemble equivalence in diffusive flow",
M. Ha [Central European Journal of Physics **7**, 575 (2009)]
- [11] "Anomalous scaling behavior in polymer thin film growth by vapor deposition",
S.-W. Son, M. Ha, and H. Jeong [Journal of Statistical Mechanics (2009) P02031]
- [10] "Relevance of Abelian Symmetry and Stochasticity in Directed Sandpiles",
H.-H. Jo, and M. Ha [Physical Review Letters **101**, 218001 (2008)]
- [9] "Boundary-induced abrupt transition in the symmetric exclusion process",
A.Nagar, M. Ha, and H. Park [Physical Review E **77**, 061118 (2008)]

- [8] "Dynamic instability transitions in 1D driven diffusive flow with nonlocal hopping",
M. Ha, H. Park, and M. den Nijs [Physical Review E **75**, 061131 (2007)]
- [7] "Finite-Size Scaling in Complex Networks",
H. Hong, M. Ha, and H. Park [Physical Review Letters **98**, 258701 (2007)]
- [6] Comment on "Non-Mean-Field Behavior of the Contact Process on Scale-Free Networks",
M. Ha, H. Hong, and H. Park [Physical Review Letters **98**, 029801 (2007)]
Virtual Journal of Biological Physics Research 13, issue 2 (2007).

- [5] "Queuing transitions in the asymmetric simple exclusion process",
M. Ha, J. Timonen, and M. den Nijs [Physical Review E **68**, 056122 (2003)]
- [4] "Effect of a columnar defect on the shape of slow-combustion fronts",
M. Myllys, J. Maunuksela, J. Merikoski, J. Timonen, V.K. Horváth, M. Ha, and M. den Nijs
[Physical Review E **68**, 051103 (2003)]
- [3] "Macroscopic car condensation in a parking garage",
M. Ha, and M. den Nijs [Physical Review E **66**, 036118 (2002)]
- [2] "Particle dynamics in a mass-conserving coalescence process",
M. Ha, H. Park, and M. den Nijs [Journal of Physics A **32**, L495 (1999)]
- [1] "Exact solutions of a restricted ballistic deposition model on a 1D staircase",
H. Park, M. Ha, and I.-M. Kim [Physical Review E **51**, 1047 (1995)]

Ongoing/Pending Projects

- [3] "Submonolayer regime of VDP growth", M. Ha, S.-W. Son, and H. Jeong
- [2] "The polymer thin film growth model with vertically collimated flux",
S.-W. Son, M. Ha, and H. Jeong
- [1] "Universality class of (2+1)-d polymer thin film growth by vapor deposition",
S.-W. Son, M. Ha, I.J. Lee, and H. Jeong

List of Presentations

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International: Invited & Contributed Talks (35 international talk only shown here)

35. The 7th International Conference on Complex Networks and Their Applications:
COMPLEX NETWORKS 2018 at University of Cambridge, Cambridge, United Kingdom
[12/11-13, 2018]: "Interplay of hubs and cooperation in social contagion".
34. New Trends in Nonequilibrium Statistical Mechanics: Classical and Quantum Systems (nesmcq18)
at Ettore Majorana Centre for Scientific Culture, Erice, Italy
[07/23-21, 2018]: "Role of Localized Defect in 1D Driven Diffusive Flow".
33. The 8th KIAS Conference on Statistical Physics (NSPCS 2018) at KIAS, Seoul, Korea
[07/09-12, 2018]: "Universal Properties of Complex Contagions".
32. BIFI International Conference 2018: Complexity, Networks, and Collective Behavior
at Patio de la Infanta, Zaragoza, Spain
[02/06-08, 2018]: "Role of Structural Heterogeneity in Generalized Epidemic Process".
31. The 9th International Conference of Nonlinear Science: Dynamic Days Asia Pacific 9 (DDAP9)
at Hong Kong Baptist University, Hong Kong, China
[12/14-17, 2016]: "Relevance of columnar defect in KPZ growing interface".
30. STATPHYS26 at Lyon, France [07/18-22, 2016]: "Cooperative Effects on Epidemic Dynamics".

29. The 7th KIAS Conference on Statistical Physics (NSPCS 2016) at KIAS, Seoul, Korea [07/4-7, 2016]: “Role of Bias in Generalized Contact Process”.
28. International School and Conference on Networks Science (NetSci 2016) at K-Hotel, Seoul, Korea [05/30-06/3, 2016]:
“Dynamic Scaling in Synchronization of Coupled Oscillators on Complex Networks”
27. DYCOSEC15 - International Workshop on Dynamics of Coupled Oscillators: 40 years of the Kuramoto Model at MPIPKS, Dresden, Germany [07/27-31, 2015]: “Dynamic scaling and universality class in synchronization”.
26. The 113th Statistical Mechanics Conference at Rutgers University, New Brunswick, NJ, U.S.A. [05/10-12, 2015]: “Universality Class of GEP on Modular Networks” (short talk).
25. STATPHYS25 at Seoul, Korea [07/22-26, 2013]:
“Dynamic finite-size scaling and universality issues in synchronization”.
24. Patterns & waves in populations of cells and active particles:
Satellite Meeting of STATPHYS25 at Korea University, Seoul [07/19-20, 2013]: “Time Evolution of Phase Synchronization in Coupled Oscillators”.
23. The APS 2013 March Meeting, Baltimore, MD, U.S.A. [03/18-22, 2013]:
“Dynamic Scaling of Synchronization in Kuramoto-type Globally Coupled Oscillators”.
22. Workshop on the Open Problems of the Glass Transition and Related Topics, Kyushu University Nishi-Jin Plaza, Fukuoka, Japan [12/16-20, 2012]: “Glassy Behaviors in Random Constraint Satisfaction Problems”.
21. The 7th International Conference of Nonlinear Science: Dynamic Days Asia Pacific 7 (DDAP7) and the 11th Taiwan International Symposium on Statistical Physics at Academia Sinica, Taipei, Taiwan [08/06-09, 2012]: “Applications of Absorbing Phase Transitions in Random Networks”.
20. 2012 - 25th Annual Workshop of Center for Simulational Physics at University of Georgia: Recent Developments in Computer Simulational Studies in Condensed Matter Physics, Athens, GA, U.S.A. [02/20-24, 2012]: “Kinetic Roughening in Polymer Thin Film Growth”.
19. Feza Gürsey Institute - Imperial College International Summer School and research workshop on Complexity, Istanbul, Turkey [09/05-10, 2011]: “Q-Coloring Problems in Complex Networks”.
18. The 105th Statistical Mechanics Conference at Rutgers University, New Brunswick, NJ, U.S.A. [05/08-10, 2011]: “Contact Process with Long-term Memory and Branching Bias” (short talk).
17. APCTP Workshop on Current Progress of Simulations in Complex Systems at APCTP headquarters, Pohang, Korea [11/15-17, 2010 (invited)]:
“Critical Behaviors of Stochastic-Local-Search Algorithms in Random CSPs”.
16. The 4th KIAS Conference on Statistical Physics (NSPCS 2010):
Satellite Meeting of STATPHYS24 at KIAS, Seoul, Korea [07/26-29, 2010]: “Finite-Size Effects on Critical Behaviors in Random K -SAT”.
15. STATPHYS24 at Cairns, Australia [07/18-23, 2010]:
“Universality Class of Polymer Thin Film Growth in (1+1) and (2+1) dimensions”.
14. New Frontiers in Complex Networks (NFCN 2010):
STATPHYS24 satellite meeting at SNU, Seoul, Korea [07/12-16, 2010 (invited)]: “Critical behaviors in random constraint satisfaction problems”.
13. International Workshop on Statistical Physics and Computer Science (SPCS 2010):
Satellite Meeting of STATPHYS24 at KITPC, Beijing, China [07/08-11, 2010]: “Phase transitions and critical behaviors in random k -satisfiability problems”.

12. The APS 2010 March Meeting, Portland, OR, U.S.A.
[03/15-19, 2010]: "Finite-Size Scaling (FSS) in Random K -Satisfiability Problems (K-SAT)".
11. APCTP Symposium on Fields of Special Interests in Theoretical Physics
at APCTP Headquarters, Pohang
[11/30-12/01, 2009 (invited)]: "Critical Phenomena in Critical Phenomena: Universality Perspective".
10. The 6th APCTP-KIAS Winter School on Statistical Physics
at POSCO International Center, POSTECH, Pohang
[02/04-06, 2009 (invited)]:
"Why is Asymmetric Simple Exclusion Process still so popular? Not a just toy model?".
9. International Conference on Complex Networks: *The Past 10 Years and Future* at SNU, Seoul
[12/19-22, 2008]:
"Numerical Study of Statistical Models on Scale-Free Networks with Size-Dependent Cutoff".
8. The 5th International Conference of Nonlinear Science: Dynamic Days Asia Pacific 5 (DDAP5)
at Nara Prefectural New Public Hall, Nara, Japan
[09/09-12, 2008]: "Anomalous scaling behavior in polymer thin film growth".
7. SigmaPhi2008 at Orthodox Academy of Crete, Kolympari-Chania, Greece
[07/14-18, 2008]: "Instability transition and ensemble equivalence in diffusive flow".
6. The "Physics in Distributed Information Systems" (PhysDIS) workshop
at NORDITA, Stockholm, Sweden
[05/15-17, 2008 (invited talk)]: "FSS in complex networks".
5. The 10th Asia Pacific Physics Conference (APPC10)
at POSCO International Center, POSTECH, Pohang, Korea
[08/21-24, 2007]: "Dynamic behavior of 1D driven diffusive flow with nonlocal hopping".
4. The 4th International Conference of Nonlinear Science: Dynamic Days Asia Pacific 4 (DDAP4)
at POSTECH, Pohang, Korea
[07/12-14, 2006]: "FSS in complex networks".
3. The 2nd KIAS Conference on Statistical Physics (NSPCS06) at KIAS, Seoul, Korea
[07/03-06, 2006 (invited)]: "FSS in complex networks".
2. The 89th Statistical Mechanics Conference at Rutgers University, New Brunswick, NJ, U.S.A.
[05/18-20, 2003]: "Queuing transitions in 1D drive flow due to an obstruction" (short talk).
1. The APS 2001 March Meeting, Seattle, WA, U.S.A. [03/12-16, 2001]:
"Dynamic analogue of Bose condensation in a traffic model with a parking garage".

Domestic: Invited & Contributed Talks (38 domestic talk only shown here)

35. Gwangju-Chonnam KPS 2018 Annual Meeting at Chonnam National University, Gwangju, Korea
[12/20, 2018 (invited)]: "Mixed-Order Transitions in Spread of Behavior".
37. The KPS 2018 Fall Meeting at CECO, Changwon, Korea
[10/24-26, 2018 (invited)]:
"Effects of the threshold for cooperation on social contagions"
36. The KPS 2018 Spring Meeting at DCC, Daejeon, Korea
[04/25-27, 2018]: "Cutoff-dependent finite-size scaling in scale-free networks".
35. Gwangju-Chonnam KPS 2017 Annual Meeting at Chonnam National University, Gwangju, Korea
[12/21, 2017]: "Dynamic Scaling in Activity-Driven Temporal Networks".
34. STATPHYS Monthly Meeting sponsored by APCTP Topical Program
on "Statistical Physics of Disordered, Non-equilibrium and Complex Systems"
at KIAS, Seoul, Korea
[12/09, 2017]: "Particle-jamming and hole-condensation in 1D driven flow".
33. The KPS 2017 Spring Meeting at DCC, Daejeon, Korea
[04/19-21, 2017]: "Finite-size scaling of the slow-bond problem of TASEP".

32. Gwangju-Chonnam KPS 2015 Annual Meeting at Chosun University, Gwangju, Korea
[12/22, 2015 (invited)]: “Extended Finite-Size Scaling in Epidemic Models”.
31. The KPS 2015 Fall Meeting at HICO, Gyeongju, Korea
[10/21-23, 2015]: “Generalized Epidemic Process on Scale-Free Networks” (designated speaker).
30. Gwangju-Chonnam KPS 2014 Annual Meeting at Chonnam National University, Gwangju, Korea
[12/23, 2014]: “Phase Transitions in Generalized Epidemic Process”.
29. The KPS 2014 Fall Meeting at KDJCC, Gwangju, Korea
[10/22-24, 2014]: “Finite-Size Scaling in the KPZ-related Sign Phase Transition”.
28. STATPHYS Monthly Meeting sponsored by APCTP Topical Program
on "Statistical Physics of Disordered, Non-equilibrium and Complex Systems"
at KIAS, Seoul, Korea
[06/21, 2014]: “Role of Disorder in Critical Behaviors of Nonequilibrium Processes”.
27. The 4th Workshop on Non-Equilibrium Fluctuation Theorem at SEACLOUD Hotel, Busan, Korea
[01/12-14, 2014]: Review on “Entropy production and fluctuation relations for a KPZ interface”.
26. Gwangju-Chonnam KPS 2013 Annual Meeting at Chonnam National University, Gwangju, Korea
[12/17, 2013]: “Dynamic Scaling in Polymer Thin Film Growth”.
25. The KPS 2013 Spring Meeting at DCC, Daejeon, Korea
[04/24-26, 2013]: “Dynamic Scaling in Time Evolution of Phase Synchronized Oscillators”.
24. Gwangju-Chonnam KPS 2012 Annual Meeting at Chosun University, Gwangju, Korea
[12/14, 2012 (invited)]:
“How to Solve Random Constraint Satisfaction Problems using Stochastic-Local-Search Algorithms”.
23. The 2nd Workshop on Non-Equilibrium Fluctuation Theorems at SEACLOUD Hotel, Busan, Korea
[05/18-19, 2012]: “Dynamic scaling of synchronized oscillation”.
22. The KPS 2012 Spring Meeting at DCC, Daejeon, Korea
[04/25-27, 2012]: “Totally Asymmetric Simple Exclusion Process with a Quenched Slow Bond”
21. Gwangju-Chonnam KPS 2011 Annual Meeting at Chonnam National University, Gwangju, Korea
[12/16, 2011 (invited)]: “Synchronization Phase Transitions in Globally Coupled Oscillators”.
20. The KPS 2011 Fall Meeting at BEXCO, Busan, Korea
[10/19-21, 2011]: “Revisited Finite-Size Scaling in Complex Networks”.
19. The KPS 2011 Spring Meeting at DCC, Daejeon, Korea
[04/13-15, 2011 (invited)]: “Role of Memory in Contact Process”.
18. The KPS 2010 Fall Meeting at Phoenix Park, Pyeongchang, Korea
[10/20-22, 2010]: “Critical Behavior of Q-Coloring in Random Networks”.
17. The KPS 2010 Spring Meeting at DCC, Daejeon, Korea
[04/21-23, 2010 (invited, Yong-Bong Prize)]:
“Phase Transitions and Critical Behaviors in Random Constraint Satisfaction Problems”.
16. Winter School on Algorithms and Combinatorics 2010
at Hongik International Center, Chochiwon, Korea
[01/11-13, 2010]: “Finite-Size Scaling in Random k-Satisfiability Problems”.
15. The KPS 2009 Fall Meeting at CECO, Changwon, Korea
[10/22-23, 2009]: “Finite-Size Scaling in Random k-Satisfiability Problems”.
14. The 15th Workshop of STATPHYS 2009 at Konjiam Resort, Gwangju, Korea
[08/12-14, 2009]: “Intermittency studies and multifractality in (1+1)-d surface growth”.
13. The 24th MDRG Workshop at Mt. Jangtae Resort, Daejeon, Korea
[06/25-26, 2009]: “Anomalous scaling behavior in polymer thin film growth by vapor deposition”.
12. The KPS 2009 Spring Meeting at DCC, Daejeon, Korea
[04/23-24, 2009]: “Critical behavior of Ising model in annealed SFNs”.
11. The KPS 2008 Fall Meeting at KimDaeJung Convention Center, Gwangju, Korea
[10/23-24, 2008]: “Driven contact process with a long-term memory”.

10. The KPS 2008 Spring Meeting at DCC, Daejeon, Korea
[04/17-18, 2008]: "Boundary induced abrupt transitions in symmetric exclusion process".
9. The KPS 2007 Fall Meeting at Jeju ICC, Jeju, Korea
[10/18-19, 2007]: "Nonequilibrium phase transitions in the annealed version of SFNs".
8. The 14th Workshop for STATPHYS 2007 at Naminara Hotel, Chunchon, Korea
[08/16-18, 2007]:
"Heterogeneous MF behaviors of the CP on the random neighbors version of SFNs".
7. The KPS 2007 Spring Meeting at Phoenix Park, Pyeongchang, Korea
[04/19-20, 2007]: "Spatial correlations and extended self-similarity in sandpiles".
6. The KPS 2006 Fall Meeting at EXCO, Daegu, Korea
[10/19-20, 2006 (invited)]: "Critical behavior of the contact process on complex networks".
5. Fall Workshop of Research Institute of Physics & Chemistry
at Chonbuk National University, Jeonju, Korea
[09/08, 2006 (invited)]: "Mean-field behavior of the contact process on complex networks".
4. APCTP Extended Monthly Meeting at Pukyong National University, Busan, Korea
[08/19-20, 2004 (invited)]: "Instability threshold in a 1D driven diffusive system".
3. The KPS 2004 Spring Meeting at Sungkyunkwan University, Suwon, Korea
[04/23-24, 2004]:
"Instability threshold in a 1D driven diffusive system: ASEP with nonlocal hopping".
2. The 12th Workshop of Thermal and STATPHYS 2003 at Soohnbu, Korea
[08/19-21, 2003]: "Queuing transitions in the ASEP".
1. The KPS 1994 Spring Meeting at Inha University, Incheon, Korea
[04/22-23, 1994]: "A restricted ballistic deposition model on a 1D staircase".

Colloquia/seminars

15. Special Lecture for Professional Career and Job Expo
at Daedeok Middle School, Daejeon, Korea
[07/11, 2018]: "What is physics? Could being physicist is a job for living?".
14. Physics Colloquium at Chonnam National University, Gwangju, Korea
[11/20, 2014]: "More is either Different or the Same:
Condensed-Matter Physics vs. Statistical Physics, Universality of Complex Systems".
13. Selected Program Seminar at Chosun Woman High School, Gwangju, Korea
[12/12, 2012]: "False and True in Physics: Merits of Woman Physicists".
12. Physics Seminar at Seoul National University, Seoul, Korea
[03/23, 2012]: "Dynamic Scaling in Globally-Coupled Kuramoto Oscillators".
11. Physics Seminar at University of Suwon, Suwon, Korea
[05/20, 2010]: "How to Understand Critical Behavior in Complex Systems?".
10. HYKE Seminar at Seoul National University, Seoul, Korea
[05/07, 2010]: "Phase Transitions and Universality Classes in Complex Systems".
9. Physics Colloquium at Inha University, Incheon, Korea
[10/16, 2008]: "Simple physical model studies for complex systems and statistical physics".
8. The PhysDIS Program (05/05-31) Seminar at NORDITA, Stockholm, Sweden
[05/28, 2008]: "Instability transitions and ensemble equivalence in diffusive flow".
7. Condensed-Matter Physics Seminar at Soongsil University, Seoul, Korea
[12/18, 2007]: "Kinetic roughening and multifractality in vapor deposition polymerization growth".
6. Physics Colloquium at Chonbuk National University, Jeonju, Korea
[09/28, 2006]: "Complexity and criticality in nonequilibrium systems"
5. The 2nd APCTP-KIAS Winter School on Statistical Physics at Phoenix Park, Pyeongchang, Korea
[1/18-21, 2005 (lecture-type seminar)]: "ASEP: an overview & some recent developments".

4. ABRL Physics Seminar at Seoul National University, Seoul, Korea
[12/03, 2004]: "Queuing transitions in 1D driven flow".
3. Condensed-Matter Physics Seminar at Soongsil University, Seoul, Korea
[02/03, 2004]: "Nonequilibrium phase transitions in 1D driven diffusive systems".
2. Physics Colloquium at Inha University, Incheon, Korea
[11/27, 2003]: "Phase transitions in 1D nonequilibrium driven systems".
1. Condensed-Matter Seminar at KIAS, Seoul, Korea
[01/20, 2003]: "ASEP with a site defect".

Contributed posters (23 international poster presentations only shown here)

23. APCTP-KIAS Workshop on "Motors and Engines"
[06/25-27, 2018]: "One-dimensional TASEP with a slow bond".
22. Dynamics Days 2018
- International conference on chaos and nonlinear dynamics at Hilton City Center, Denver, U.S.A.
[01/04-06, 2018]:
"Universal Scaling Properties of Cooperative Contagion with Structural Heterogeneity".
21. Yukawa International Seminar 2015 (YKIS2015)
- New Frontiers in Non-equilibrium Statistical Physics 2015 at YITP, Kyoto, Japan
[08/17-19, 2015]: "Dynamic Scaling Analysis in Random Constraint Satisfaction Problems".
20. Japan-France Joint Seminar
- New Frontiers in Non-equilibrium Physics of Glassy Materials at YITP, Kyoto, Japan
[08/11-14, 2015]: "Dynamic Scaling Analysis in Random Constraint Satisfaction Problems".
19. YITP workshop Interface fluctuations and KPZ universality class
- unifying mathematical, theoretical, and experimental approaches at YITP, Kyoto, Japan
[08/20-23, 2014]: "Dynamic phase transition by coupling Ising spins to KPZ-type surface growth".
18. The 6th KIAS Conference on Statistical Physics (NSPCS12) at KIAS, Seoul, Korea
[07/08-10, 2014]:
"Synchronization in Kuramoto Coupled Oscillators: From Dynamic Scaling to Transition Nature".
17. The 5th YSM-SPIP Frontier of Statistical Physics and Information Processing (FSPIP2013):
Perspectives from Nonequilibrium Behaviors - Satellite Meeting of STATPHYS25
at YITP, Kyoto, Japan
[07/11-14, 2013]: "Extended finite-size scaling in the Kuramoto model".
16. The 5th KIAS Conference on Statistical Physics (NSPCS12) at KIAS, Seoul, Korea
[07/03-06, 2012]: "Dynamic Scaling in Synchronization Transition of Coupled Oscillators".
15. International Seminar on Large Fluctuations in Non-Equilibrium Systems (LAFNES11),
at MPIPKS, Dresden, Germany
[07/04-15, 2011]: "Contact process with power-law type feedbacks".
14. International Seminar on Many-Body Systems Far From Equilibrium (MBSFFE09),
Fluctuations, Slow Dynamics, and Long-Range Interactions at MPIPKS, Dresden, Germany
[02/16-27, 2009]: "Anomalous scaling behavior in polymer thin film growth by vapor deposition".
13. SigmaPhi2008 at Orthodox Academy of Crete, Kolymari - Chania, Greece
[07/14-18, 2008]: "Anomalous scaling behavior in polymer thin film growth".
12. The 3rd KIAS Conference on Statistical Physics (NSPCS08) at KIAS, Seoul, Korea
[07/01-04, 2008]: "Instability transition and ensemble equivalence in diffusive flow".
11. STATPHYS23 at Genova, Italy [07/09-13, 2007]: "Finite-size scaling in complex networks".
10. Satellite Meeting of before STATPHYS23:
STATICS AND DYNAMICS OF GRANULAR MEDIA AND COLLOIDAL SUSPENSIONS, at Napoli, Italy
[07/04-06, 2007]:
"Dynamic instability transitions in 1D driven diffusive flow with nonlocal hopping".

9. International Conference on the Frontiers of Nonlinear and Complex Systems at Hong Kong Baptist University, Hong Kong, China [05/24-26, 2006]: "FSS in complex networks".
8. The Issac Newton Institute School on *Non-Equilibrium Dynamics of Interacting Particle Systems* (PDSW02) at the INI, Cambridge, U.K. [03/27-04/07, 2006]: "Queuing transitions in the ASEP".
7. STATPHYS22 at Bangalore, India [07/03-11, 2004]: "ASEP with nonlocal hopping".
6. Satellite Meeting of before STATPHYS22: Nonequilibrium Statistical Physics of Complex Systems (NSPCS04) at KIAS, Seoul, Korea [06/29-07/02, 2004]: "Instability threshold in a 1D driven diffusive system".
5. NESTPHY03-MPIPES International Seminar at MPIPES, Dresden, Germany [09/20-10/10, 2003]: "Queuing transitions in the ASEP".
4. The 2nd Networking Day of Physics Career Development Organization at the University of Washington, Seattle, WA, U.S.A. [01/30, 2003]: "The effect of a columnar defect on slow combustion of papers".
3. The 6th APCTP Winter School on *Scaling and Phase Transitions in Complex Networks and Nonequilibrium Systems* at POSTECH, Pohang, Korea [02/18-21, 2002]: "Macroscopic car condensation in a parking garage".
2. Fundamental Problems of Statistical Physics X (FPSPX) at Altenberg, Germany [08/20-09/01, 2001]: "Dynamic analogue of Bose condensation in a traffic model with a parking garage"
1. The 4th CTP Workshop on Statistical Physics at Seoul National University, Seoul, Korea [01/27-31, 1997]: "Dynamic behaviors of 1D anchored interfaces".

Contributed Articles

9. "Spatial Correlations and Extended Self-Similarity Properties"
New Physics: Sae Mulli HIGHLIGHTS, PHYSICS & HIGH TECHNOLOGY
Vol. 24, No. 12 December, 2015.
8. "Fundamental Structural Constraint of Random Scale-Free Networks"
Most Recent Research Review, PHYSICS & HIGH TECHNOLOGY
Vol. 22, No. 1/2 January/February, 2013.
(coauthor: Yongjoo Baek - currently Postdoctoral Fellow at Technion, Israel).
7. "Numerical Study of Synchronization in the Kuramoto Model with Finite Inertia"
New Physics: Sae Mulli HIGHLIGHTS, PHYSICS & HIGH TECHNOLOGY
Vol. 21, No. 11 November, 2012.
(coauthor: Chulho Choi - currently Postdoctoral Fellow at Central European University, Hungary).
6. "Professor Column", Chosun University News, Vol. 198, January 2012.
5. "Relevance of Abelian Symmetry and Stochasticity in Directed Sandpiles"
Most Recent Research Review, PHYSICS & HIGH TECHNOLOGY
Vol. 18, No. 1/2 January/February, 2009.
(coauthor: Hang-Hyun Jo - currently Research Professor at POSTECH, Korea).
4. "International Conference on the Frontiers on Nonlinear and Complex Systems"
WE HERE THAT, APCTP Bulletin, Vol. 9, No. 1/2, Jan. - Dec. 2006.
3. "Farewell Essay", KIAS Newsletter, No. 33, Winter 2006.
2. "STATPHYS22: 22nd International Conference on Statistical Physics of IUPAP"
Conference Participation Report, PHYSICS & HIGH TECHNOLOGY
Vol. 13, No. 9, September, 2004.
1. "KIAS-APCTP Satellite Meeting and India Main Meeting of STATPHYS22"
Conference Report, KIAS Newsletter, No. 25, Autumn 2004.
(coauthor: Dr. Su-Chan Park - currently Assistant Professor at Catholic University, Korea).