

Hyukpyo Hong

CONTACT INFORMATION	Department of Mathematical Sciences, KAIST Biomedical Mathematics Group, IBS 291 Daehak-ro, Yuseong-gu, Daejeon 34141 Korea.	<i>E-mail:</i> hphong@kaist.ac.kr <i>Web:</i> http://mathsci.kaist.ac.kr/~hphong
RESEARCH INTERESTS	Chemical reaction network theory, Stochastic modeling of biochemical reaction systems, Bayesian inference, Quasi-steady-states approximation, Stochastic model reduction, Sleep analysis, Wearable data analysis	
EDUCATION	Korea Advanced Institute of Science and Technology , Daejeon, Republic of Korea Integrated Master's & Ph.D. Program, 2018 – current (expected date of the award Ph.D. - Feb. 2023) Korea Advanced Institute of Science and Technology , Daejeon, Republic of Korea Bachelor of Mathematical Sciences, 2013 – 2017 (Cum Laude)	
HONORS AND AWARDS	2019 - 2023 Global Ph.D. Fellowship (Full Tuition), NRF 2017 36th National Undergraduate Mathematic Competition Silver Award, KMS 2014 33rd National Undergraduate Mathematic Competition Silver Award, KMS 2016 Mirae Asset Global Exchange Scholarship, Mirae Asset Park Hyeon Joo Foundation 2014 Dean's List Award, College of Natural Sciences, KAIST 2013 32nd National Undergraduate Mathematic Competition Silver Award, KMS 2013 – 2017 The National Scholarship for Science and Engineering (Full Tuition), KOSAF	
TEACHING EXPERIENCE	Undergraduate Research Program (URP) (Spring 2019) <i>Mentor</i>	KAIST, Daejeon, Korea – Mentoring an undergraduate student. Discussed with and guided the student to investigate <i>the total quasi-steady-state approximation for a competitive system</i> . The student won poster presentation prize in 2019 KSIAM Spring conference and prize in URP final evaluation.
	Introduction to Mathematical Biology (Fall 2018) <i>Teaching Assistant</i>	KAIST, Daejeon, Korea – Prepared and graded quiz problems and MATLAB homeworks weekly.
	Linear Algebra (Spring 2018) <i>Teaching Assistant</i>	KAIST, Daejeon, Korea – Prepared and graded quiz problems.
	Introduction to Linear Algebra (Spring 2018), Differential Equations (Fall 2018, Spring 2019) <i>Teaching Assistant</i>	KAIST, Daejeon, Korea – Graded quiz problems and homeworks weekly. – Graded the midterm and final exams.
PAPERS	†: co-corresponding author, *: co-1st author. One can enter the website by clicking the underlined title of a paper.	

1. Dae Wook Kim, **Hyukpyo Hong** and Jae Kyoung Kim†, Bayesian inference of cell-to-cell variability in distributed time delay in cellular processes using an exact moment-based mixed effects modeling approach, to be submitted, 2021
2. Mark Jayson Cortez, **Hyukpyo Hong**, Boseung Choi†, Jae Kyoung Kim†, and Krešimir Josić†
3. Yun Min Song*, **Hyukpyo Hong*** and Jae Kyoung Kim†, Universally valid reduction of multi-scale stochastic biochemical systems with simple non-elementary propensities, *bioRxiv*, 2021
4. Jaehyoung Hong*, Su Jung Choi*, Se Ho Park, **Hyukpyo Hong**, Victoria Booth, Eun Yeon Joo†, and Jae Kyoung Kim†, Personalized sleep-wake patterns aligned with circadian rhythm relieve daytime sleepiness, *bioRxiv*, 2021
5. **Hyukpyo Hong***, Jinsu Kim*, M. Ali Al-Radhawi, Eduardo D. Sontag, Jae Kyoung Kim†, Derivation of stationary distributions of biochemical reaction networks via structure transformation, *Communications Biology*, 2021.

INVITED TALKS

- [Upcoming] June 16, 2021: SMB Annual Meeting** Online
 Inference of stochastic dynamics in biochemical reaction networks Minisymposium
- May 27, 2021: SIAM Conference on Dynamical Systems** Online
 Derivation of stationary distributions of stochastic chemical reaction networks via network translation Minisymposium
- May 13, 2021: Seminar on the Mathematics of Reaction Networks [link]** Online
 Derivation of stationary distributions of stochastic chemical reaction networks via network translation.
- October 24, 2020: Annual Meeting of Korean Mathematical Society** Online
 Derivation of stationary distributions of biochemical reaction networks via structure transformation Minisymposium

CONTRIBUTED TALKS AND POSTERS

- November 13, 2020: Annual Conference of KSIAM** Online
 Derivation of stationary distributions of biochemical reaction networks via structure transformation Poster
- August 20, 2020: SMB Annual Meeting** Online
 Derivation of stationary distributions of biochemical reaction networks via structure transformation Contributed talk
- July 23, 2019: SMB Annual Meeting** Montreal, Canada
 Product-Form Stationary Distributions for Non-Complex Balanced Networks Poster
- July 8, 2019: Chemical Reaction Networks Workshop** Torino, Italy
 Product-Form Stationary Distributions for Non-Complex Balanced Networks Short talk
- May 18, 2019: KSIAM Spring Conference** Seoul, Korea
 Product-Form Stationary Distributions for Non-Complex Balanced Networks Contributed talk
- May 11, 2019: A3 Workshop on Mathematical Life Science** Beijing, China
 Product-Form Stationary Distributions for Non-Complex Balanced Networks Student talk