Introduction to our research group

Cấn Văn Hảo

Institute of Mathematics, Vietnam Academy of Science and Technology

Hà Nội, July 2025

Curriculum Vitae

Education

- 2007-2011: Bachelor degree at Hanoi National University of Education
- 2012-2013: Master degree at Aix-Marseille University
- 2013-2016: Doctor degree at Aix-Marseille University

Working experience

- August 2016- present: Researcher at Institue of Mathematics, VAST
- December 2017- December 2019: Japan Society for the Promotion of Science (JSPS) fellowship at Kyoto University (Japan)
- February 2020 - November 2021: Postdoc at National University of Singapore (Singapore)

Research interest and grants

Theme of research. Probability and Statistical Physics:

- Stochastic processes, e.g. Gaussian processes.
- Interacting particle systems, e.g. percolation, spin systems
- Random graph theory

Grants:

(i) Strong research group (01/2024-12/2026) by International Centre of Research and Training in Mathematics (ICRTM)

(ii) Research grant by National Foundation for Science and Technology Development (8/2024-7/2026)

Our research group

Grant title: Asymptotic behavior of interacting particle systems

Member: Cấn Văn Hảo; Nguyễn Văn Quyết (Phd student); Vũ Hồng Sơn (Pre-Phd student) [1]

Finance: 600.000.000 VND ($\approx$ 23.000 USD) for 3 years (01/2024-12/2026)

Activities:

(i) Conduct research in the theme of grant

(ii) Organize regular seminars to exchange knowledge and results

(iii) Organize a workshop in the theme of grant (planed in 2026)

(iv) Participate in common activities of ICRTM, such as summer schools, thematic semesters

[1] Our group was also supported by a grant of ICRTM for talented students in 2021-2022 when Quyết was a Pre-Phd student and Sơn is a Master student

Impact of the grants

1. Strengthen the research capacity of each member

   • We learn both individually and from colleagues through seminars and schools

2. Build a research group in probability and statistical physics involving young members

   • Some undergraduate students: Nguyen Hoang Viet (HNUE); Le Ba Tu Duy (HPU2); Dang Viet Tinh (KHU)

3. Expand and enhance our research collaborations

   • Some collaborators: Doan Thai Son, Pham Viet Hung, Shuta Nakajima, Naoki Kubota

Related publications

1. Cấn Văn Hảo, Đoàn Thái Sơn, Nguyễn Văn Quyết. *Limit theorems for the one dimensional random walk with random resetting to the maximum*. Journal of Statistical Physics, **183** (2021), no. 21
2. Cấn Văn Hảo, Nguyễn Văn Quyết, Vũ Hồng Sơn. *On the universality of the superconcentration in mixed p-spin models*. Journal of Statistical Physics. **190** (2023), no. 80
3. Cấn Văn Hảo, Shuta Nakajima, Nguyễn Văn Quyết. *Lipschitz-continuity of time constant in generalized First-passage percolation*. Stochastic Processes and their Applications (2024), **175**, no. 10440
4. Cấn Văn Hảo, Naoki Kubota, Shuta Nakajima. *Lipschitz-type estimate for the frog Model with Bernoulli initial configuration*. Mathematical Physics, Analysis and Geometry (2025), **28**, no. 1

Thank you for your attention!