

# Hyeonyong Kim

Department of Physics and Astronomy  
Seoul National University, Seoul 08826, Republic of Korea

gusdyd398@snu.ac.kr

## Education

---

**Seoul National University (SNU)** 2023/03 - present

- Ph.D Candidate, The School of Physics

**Seoul National University (SNU)** 2018/03 - 2023/02

- B.Sc, The School of Aerospace Engineering
- B.Sc, The School of Astronomy
- Minor, The School of Physics
- Cum laude

## Publication

---

- **Kim, H.**, Kim, J.-H., Jung, M., Roca-Fabrega, S., & 20 other co-authors for the AGORA Collaboration. “The AGORA High-resolution Galaxy Simulations Comparison Project. X: Formation and Evolution of Galaxies at the High-redshift Frontier”, *astro-ph:2511.04435, ApJ 1000 (2026) 276*
- Jung, M., Kim, J.-H., Nguyen, T. H., Rodríguez-Cardoso, R., Roca-Fàbrega, S., Primack, J. R., Barrow, K., Genina, A., Granizo, P., **Kim, H.**, & 17 other co-authors for the AGORA Collaboration. “The AGORA High-resolution Galaxy Simulations Comparison Project. VIII: Disk Formation and Evolution of Simulated Milky Way Mass Galaxy Progenitors at  $1 < z < 5$ ”, *astro-ph:2505.05720, ApJ 994 (2025) 245*
- Rodríguez-Cardoso, R., Roca-Fàbrega, S., Jung, M., Nguyen, T. H., Kim, J.-H., Primack, J., Agertz, O., Barrow, K. S. S., Gallego, J., Nagamine, K., Powell, J. W., Revaz, Y., Velázquez, H., Genina, A., **Kim, H.**, & 7 other co-authors for the AGORA Collaboration. “The AGORA High-resolution Galaxy Simulations Comparison Project. VII: Satellite Quenching in Zoom-in Simulation of a Milky Way-mass Halo”, *astro-ph:2505.05844, A&A 698 A303 (2025)*
- Strawn, C., Roca-Fabrega, S., Primack, J. R., Kim, J.-H., Genina, A., Hausammann, L., **Kim, H.**, & 21 other co-authors for the AGORA Collaboration. “The AGORA High-resolution Galaxy Simulations Comparison Project. VI: Similarities and Differences in the Circumgalactic Medium,” *astro-ph:2402.05246, ApJ 962 (2024) 29*
- Jung, M., Roca-Fabrega, S., Kim, J.-H., Hausammann, L., **Kim, H.**, & 16 other co-authors for the AGORA Collaboration. “The AGORA High-resolution Galaxy Simulations Comparison Project. V: Satellite Galaxy Populations in a Cosmological Zoom-in Simulation of a Milky Way–Mass Halo,” *astro-ph:2402.05392, ApJ 964 (2024) 123*
- Roca-Fabrega, S., Kim, J.-H., Primack, J. R., Jung, M., Hausammann, L., **Kim, H.**, & 20 other co-authors for the AGORA Collaboration. “The AGORA High-resolution Galaxy Simulations Comparison Project IV: Halo and Galaxy Mass Assembly in a Cosmological Zoom-in Simulation at  $z \leq 2$ ,” *astro-ph:2402.06202, ApJ 968 (2024) 125*

### *Research Experiences*

---

- Research Internship** Computational Cosmology Group, SNU (Advisor: Ji-hoon Kim)
- Studying the population of satellite halos and black hole seed (2020/09 - 2023/02)
- Research Internship** Aerodynamic Simulation & Design Laboratory, SNU (Advisor: Chongam Kim)
- Making machine learning model which calculates the flux limiter function (2022/03 - 2022/12)
- Research Internship** Solar Astronomy Group, SNU (Advisor: Jongchul Chae)
- Observing the oscillation in the solar photosphere (2022/01 - 2022/08)
  - Software development of Seoul National University Coelostat (2019/12 - 2020/02, 2020/07 - 2020/08, 2021/01 - 2021/02)

### *Awards & Scholarships*

---

<b>Outstanding Presentation Award</b>	2025/04	Korean Physics Society
<b>Woosan Scholarship</b>	2023/03 – 2027/02	Woosan Foundation
<b>President Science Scholarship</b>	2021/03 – 2022/08	Korea Student Aid Foundation
<b>Sinyang Cultural Scholarship</b>	2019/03 – 2020/02	Sinyang Cultural Foundation

### *Research Interests*

---

- Extreme High- $z$  Environment above  $z \geq 10$  using Multi-platform High-resolution Simulations
- The Origin and Seed of Supermassive Black Holes
- Application of Machine Learning & Deep Learning to Astrophysics Simulations

### *Teaching Experiences*

---

Teaching Assistant	2024	Physics I	Seoul National University
Teaching Assistant	2023	Physics II	Seoul National University
Teaching Assistant	2023	Physics Laboratory I	Seoul National University
Tutor	2022	Basic Physics I & II	Seoul National University
Tutor	2021	Foundation of Physics II	Seoul National University

### *Computing experiences*

---

- Program experience: Enzo, Gadget, GIZMO, RAMSES, yt, MUSIC, DICE, etc
- Language experience: Python, C++, Matlab, QT, Arduino IDE, etc