

Sanghyuk Moon | Curriculum Vitae

Astronomy Program, Department of Physics & Astronomy
Seoul National University, Seoul, 08826, Republic of Korea

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Education

- 06/2022 (expected) **Ph.D in Astronomy**, Seoul National University, Korea
Advisor: Woong-Tae Kim
- 06/2016 **B.S. in Astronomy (minor: physics)**, Seoul National University, Korea

Honors and Awards

- 2017–2022 **Global Ph.D. Fellowship** (Salary obtained from NRF: \$26,000/yr)
Dynamical Evolution and Star Formation in Central Molecular Zones
- 2016–2017 **Lecture & Research Scholarship**
- 2015 **National Scholarship for Science and Engineering**
- 2014 **SNU Development Fund Scholarship**
- 2013 **ASAN foundation Scholarship**

Code Development Contributions

- 2021–present Core developer of TIGRIS project (PI: Chang-Goo Kim)
Self-gravity with shearing-periodic, open, and mixed boundary conditions
- 2018–2019 Poisson solver with open boundary conditions for Cartesian and cylindrical grids in Athena++
Used in Mullen & Gammie (2020), Baehr et al. (in prep.)

Publications

- Refereed **Moon, S.**, Kim, W.-T., Kim, C.-G., and Ostriker, E. C., *Star Formation in Nuclear Rings with the TIGRESS Framework*, ApJ, 914, 9, 2021
- Moon, S.**, Kim, W.-T., and Ostriker, E. C., *A Fast Poisson Solver of Second-order Accuracy for Isolated Systems in Three-dimensional Cartesian and Cylindrical Coordinates*, ApJS, 241, 24, 2019
- Kim, W.-T. and **Moon, S.**, *Equilibrium Sequences and Gravitational Instability of Rotating Isothermal Rings*, ApJ, 829, 45, 2016
- Proceedings **Moon, S.**, *Three-Dimensional Cylindrical Poisson Solver with Vacuum Boundary Conditions*, J. Phys.: Conf. Ser., 1623, 012017
- In Preperation **Moon, S.**, Kim, W.-T., Kim, C.-G., and Ostriker, E. C., *Effects of Varying Mass Inflows on Star Formation in Nuclear Rings of Barred Galaxies*, in prep.
- Moon, S.**, Kim, W.-T., Kim, C.-G., and Ostriker, E. C., *Effects of Magnetic Field on Star Formation in Nuclear Rings of Barred Galaxies*, in prep.

Presentations

- 10/2021 **Contributed Talk**, 2021 KAS Fall Meeting, Seoul, Korea

04/2021	Contributed Talk , 2021 KAS Spring Meeting, Seoul, Korea
01/2021	Workshop Talk , 2nd Numerical Galaxy Formation Mini-Workshop, Seoul, Korea
01/2020	Workshop Talk , Numerical Galaxy Formation Mini-Workshop, Seoul, Korea
11/2019	Invited Seminar , Star Formation/ISM Rendezvous (SFIR), Princeton, USA
07/2019	Invited Talk , ASTRONUM 2019, Paris, France
04/2019	Contributed Talk , 2019 KAS Spring Meeting, Seoul, Korea
03/2019	Invited Talk , ATHENA++ workshop 2019, Las Vegas, USA
10/2016	Poster , 2016 KAS Fall Meeting, Seoul, Korea

Research Experience

10/2019–12/2019	Princeton University (two months; <i>Mentor</i> : Prof. Eve C. Ostriker) <i>Visiting Student Research Collaborator</i>
01/2019–01/2019	Princeton University (two weeks; <i>Mentor</i> : Prof. Eve C. Ostriker)
07/2018–08/2018	Princeton University (two weeks; <i>Mentor</i> : Prof. Eve C. Ostriker)
12/2017–12/2017	Osaka University (four days; <i>Mentor</i> : Prof. Kengo Tomida)

Competitively-Obtained Computing Time

2021	National Supercomputing Center, KISTI, Korea (1.4×10^7 core-hours) <i>Co-I: Effects of Magnetic Fields on Star Formation in Galactic Nuclear Rings and Formation of Circumnuclear Disks</i>
2019	National Supercomputing Center, KISTI, Korea (2.0×10^7 core-hours) <i>Co-I: Understanding Star Formation in Centers of Disk Galaxies</i>

Computing skills

Language	C/C++, MPI, Python
CFD codes	Athena, Athena++, GIZMO
Other tools	GDB, yt, Pynbody, VisIt

Professional Services and Teaching Experience

2021– <i>present</i>	Founder and Organizer , SNU Astronomy Graduate Student Journal Club
2018–2019	Founder and Organizer , SNU Astronomy Graduate Student Colloquium
2017	Teaching Assistant , Computational Astronomy
2016	Teaching Assistant , Introduction to Astrophysics