Hui Li

MIT Kavli Institute for Astrophysics and Space Research

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Current Employment

MIT MKI **Boston**
Postdoctoral Associate, Advisor: Prof. Mark Vogelsberger *Oct. 2017–*

Education

University of Michigan **Ann Arbor**
Ph.D. in Astronomy, Advisor: Prof. Oleg Y. Gnedin *2012-2017*

University of Michigan **Ann Arbor**
M.A. in Statistics, Mentor: Prof. Ji Zhu *2013-2016*

Nanjing University **Nanjing**
B.S. and M.S. in Astronomy and Astrophysics, Advisor: Prof. Yang Chen *2005–2012*

Publications

9 first-author, 20 in total, $>$300 citations, h-index=10 in ADS database

First-Author

- **Li, Hui**; Vogelsberger, Mark; Marinacci, Federico, "Disruption of Giant Molecular Clouds and Formation of Bound Star Clusters", MNRAS submitted
- **Li, Hui**; Gnedin, Oleg, "Star Cluster Formation in Cosmological Simulations. III. Dynamical and Chemical Evolution", MNRAS submitted, arXiv: 1810.11036
- **Li, Hui**; Gnedin, Oleg; Gnedin, Nickolay, "Star Cluster Formation in Cosmological Simulations. II. Effects of Star Formation Efficiency and Stellar Feedback", 2018, ApJ, 861, 107
- **Li, Hui**; Gnedin, Oleg; Gnedin, Nickolay; Meng, Xi; Semenov, Vadim; Kravtsov, Andrey, "Star cluster formation in cosmological simulations. I. Properties of young clusters", 2017, ApJ, 834, 69
- **Li, Hui**; Gnedin, Oleg, "Modeling The Formation of Globular Cluster Systems in The Virgo Cluster", 2014, ApJ, 796, 10
- **Li, Hui**; Chen, Yang, "γ-rays from Molecular Clouds Illuminated by Accumulated Diffusive Protons. II: Interacting Supernova Remnants", 2012, MNRAS, 421, 935
- **Li, Hui**; Liu, Siming; Chen, Yang, "Derivation of the Electron Distribution in SNR RX J1713.7-3946 via a Spectral Inversion Method", 2011, ApJ Letters, 742, 10
- **Li, Hui**; Chen, Yang, "γ-rays from Molecular Clouds Illuminated by Accumulated Diffusive Protons from Supernova Remnant W28", 2010, MNRAS Letters, 409, 1, 35

- **Li, Hui**; Chen, Yang; Zhang, Li, "Lepto-Hadronic Origin of γ-rays from the G54.1+0.3 Pulsar Wind Nebula", 2010, MNRAS Letters, 408, 1, 80

Co-Author ....

- Wang, Yunchong; Vogelsberger, Mark; Xu, Dandan; **Li, Hui**, et al. "Early-type galaxy density profiles from IllustrisTNG: I. Correlations with galaxy parameters", MNRAS submitted
- Meng, Xi; Gnedin, Oleg; **Li, Hui**, "Structure of high-redshift galaxies in cosmological simulations", MNRAS submitted
- Choksi, Nick; Marta Volonteri; Monica Colpi; Gnedin, Oleg; **Li, Hui**, "The star clusters that make black hole binaries across cosmic time", ApJ submitted
- Liu, Ruoyu; et al., "Gamma-Ray Production in the Extended Halo of the Galaxy and Possible Implications for the Origin of Galactic Cosmic Ray", ApJ submitted
- Brown, Gillen; Gnedin, Oleg; **Li, Hui**, "Nuclear Star Clusters in Cosmological Simulations", 2018, ApJ, 864, 94
- Choksi, Nick; Gnedin, Oleg; **Li, Hui**, "Formation of Globular Cluster Systems: From Dwarf Galaxies to Giants", 2018, MNRAS, 480, 2343
- Zhang, Shuo; et al., "NuSTAR Detection of a Hard X-ray Source in the Supernova Remnant-Molecular Cloud Interaction Site of IC 443", 2018, ApJ, 859, 141
- Kim, Ji-hoon; et al.,"The AGORA High-Resolution Galaxy Simulations Comparison Project. II: Isolated Disk Test", 2016, ApJ, 833, 202
- Zhang, Xiao; **Li, Hui**; Chen, Yang, "The γ-ray emission produced by protons that escape from supernova remnant G349.7+0.2", 2016, RAA, 16, 10
- Zhang, Xiao; Chen, Yang; **Li, Hui**; Zhou, Xin, "On the hadronic γ-ray emission from Tycho's supernova remnant", 2013, MNRAS, 429, 25
- Torres, Diego F.; **Li, Hui**; Chen, Yang; Cillis, Analia; Caliandro, Andrea G.; Rodriguez-Marrero, Ana Y., "Cosmic Rays in the Surroundings of SNR G35.6-0.4", 2011, MNRAS, 417, 3072

Proposals for High-Performance Computing

- "Disruption of giant molecular clouds via ionizing stellar feedback", 2018, PI, NASA Pleiades HEC-SMD-18-2050, $186,258$ SBUs ~ 1.6M CPU hr, equivalent to $\sim \$44,700$.
- "Exploration of directly coupled radiative quasar feedback", 2018, Co-PI, XSEDE comet TG-AST180025, 2M CPU hr, equivalent to $\sim \$70,000$.
- "Quantifying the effects of anisotropy thermal conduction on the turbulence properties in magnetized intracluster medium", 2017, XSEDE comet TG-AST170042, $50,000$ CPU hr, equivalent to $\sim \$1,750$.
- "Calibrating sub-grid models of the cosmological simulations on parsec scales", 2017, XSEDE comet TG-AST170007, $50,000$ CPU hr, equivalent to $\sim \$1,750$.

Technical Skills

- C, C++, Fortran, Python, IDL
- MPI, OpenMP, Hadoop, SQL
- R, SAS, Mathematica, LaTeX
- ART, GADGET, AREPO, yt

Professional Services

Referee of ApJ, MNRAS, RAA
Lead Guest Editor for special issues in "Advance in Astronomy"

Conferences & Seminars

- **Invited Colloquium** at the Tsinghua University, Beijing, China, Dec. 2018
- **Invited Colloquium** at the Nanjing University, Nanjing, China, Dec. 2018
- Santa Cruz Galaxy Workshop, CA, Aug. 2018
- The formation of globular clusters at high and low redshift, Sexten, Italy, Jul. 2018
- **Invited Colloquium** at the University of Massachusetts, Amherst, March 2018
- "Harvard-Heidelberg Star Formation 2017", Cambridge, MA, Nov. 2017
- **Invited Talk** for the Galaxy Seminar at the Center for Computational Astrophysics (CCA), New York, Sep. 2017
- "Forging connection: From Nuclei to the Cosmic Web", Lansing, Michigan State University, June 2017
- "Star Cluster Formation: Mapping the First Few Myr's", Madrid, Spain, June 2017
- **Invited Talk** at Sexten Workshop "Globular Cluster Systems and their host Galaxies", Sexten, Italy, June 2017
- 5th AGORA workshop, Santa Cruz, Aug. 2016
- Great Lake Cosmology Workshop, Jun. 2016
- Dynamics Group Meeting, University of Toronto, Jun 2016
- **Invited Talk** at Cluster Group Meeting, University of Chicago, May 2016
- GMT Community Science Meeting, Pacific Grove, Oct. 2015
- Santa Cruz Galaxy Workshop, CA, Aug. 2015
- **Invited Colloquium** at Nanjing University, China, Oct. 2014
- KICP Computational Cosmology Workshop, Chicago, Aug. 2013
- **Invited Talk** at 7th joint meeting of Chinese physicists worldwide (OCPA7), Kaohsiung, Taiwan, Aug. 2011
- Multi-Messenger Astronomy of Cosmic Rays, KIAA-PKU, Beijing, Apr. 2011
- Annual Conference of Chinese Astronomical Society, Nanning, China, Nov. 2010

Honors & Awards

Rackham One Term Dissertation Fellowship 2016
Rackham Conference Travel Grants, 2015, 2016, 2017
John G. Kirk Fellowship, 2014
Ralph P. Baldwin Fellowship in Astronomy, 2012
Excellent Master Thesis in Jiangsu Province, 2012
The First Award of Guanghua Scholarship in Nanjing University, 2010-2011
Excellent Graduate Student of Nanjing University, 2009-2010

Teaching & Outreach

Teaching Assistant, ASTRO 102, "Stars, Galaxies, and the Universe"	Winter 2013
Teaching Assistant, ASTRO 104 & 106, "Alien Skies"	Fall 2013
Graduate Employees' Organization (GEO) Representative	2012-2013

References

○ **Dr. Mark Vogelsberger**
Associate Professor
Massachusetts Institute of Technology
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○ **Dr. Oleg Y. Gnedin**
Associate Professor
University of Michigan
ognedin@umich.edu

○ **Dr. Nickolay Y. Gnedin**
Professor/Senior Scientist
University of Chicago/Fermilab
gnedin@fnal.gov

○ **Dr. Yang Chen**
Professor
Nanjing University
ygchen@nju.edu.cn