

Curriculum Vitae – Chang-Goo Kim

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Education

Mar 2005 – **Ph. D in Astronomy**
Feb 2011 Department of Physics and Astronomy, Seoul National University, Korea
Mar 2001 – **B. S in Astronomy**
Feb 2005 Department of Physics and Astronomy, Seoul National University, Korea

Current position

Sep 2016 – **Associate Research Scholar**
present Department of Astrophysical Sciences, Princeton University

Employment

Sep 2017 – **Flatiron Research Fellow**
Aug 2018 Center for Computational Astrophysics, Flatiron Institute
Sep 2013 – **Postdoctoral Research Associate**
Aug 2016 Department of Astrophysical Sciences, Princeton University
Oct 2011 – **CITA National Fellow**
Aug 2013 Department of Physics and Astronomy, University of Western Ontario, Canada

Grants

2022 – 2024 **PI**, NASA Astrophysics Theory Program; \$415,564
2019 **PI**, Chandra cycle 21 (Theory); \$85,000
2018 – 2021 **Co-I**, NASA TCAN (PI: Julian Borrill); \$1,398,099

Research advising

2016 – present **PhD thesis projects**
Woorak Choi (Yonsei, current), Sanghyuk Moon (SNU, PhD in 2022), Lachlan Lancaster (Princeton, PhD in 2022), Alwin Mao (Princeton, PhD in 2020), Munan Gong (Princeton, PhD in 2017)
2018 – present **Research projects for graduate students**
Minghao Guo (Princeton, current), Nora Linzer (Princeton, current), Erin Kado-Fong (Princeton, 2018), Aditi Vijayan (CCA via **KSPA**, 2018), Kareem El-Badry (CCA via **KSPA**, 2018)
2014 – present **Research projects for undergraduate students**
Ish Kaul (Princeton, current), Ryan Golant (Princeton, 2019), Mohammad Refat (CCA via **AstroCom NYC**, 2018), Roberta Raileanu (Princeton, 2014)

Teaching

2021 – 2022 **Bootcamp Lecturer**
- Teaching basic Unix commands and remote login (ssh), software version control (git and GitHub), Python programming language and scientific programming stack

2005 – 2010 **Graduate Student Instructor (Teaching Assistant)**
- Grading problem sets and leading problem-solving sessions for courses including *Solar System Astronomy and Lab.*, *Astronomical Observation & Lab. I & II*, *Astronomy and Lab.*, *Introduction to Astrophysics I & II*, *Stars and Stellar Systems*, *Man & the Universe*.
- Designing and leading the Lab class for Introduction to Astronomy
- Teaching scientific computing and numerical analysis – root-finding, numerical integration, linear algebra, linear regression

Computing time allocations

2022 – 2024 **15M CPU hrs (540k SBUs)**, NASA HECC
2018 – 2021 **80M CPU hrs**, NERSC, (PI: Julian Borrill)
2016 – 2021 **24M CPU hrs (850k SBUs)**, NASA HECC, (PI: Eve Ostriker)

Observing proposals

2019 **Co-I**, VLA Extra Large proposal (PI: Adam Leroy); Local Group L-Band Survey
2019 **Co-I**, VLA Regular proposal (PI: Woorak Choi), 7.4 hours, rank B

Scientific collaboration teams

2022 – present **Working Group Leader**, [Simons Collaboration on Learning the Universe](#)
2017 – 2022 **Working Group Leader**, [Simulating Multiscale Astrophysics to Understand Galaxies](#) (SMAUG)
2018 – 2021 **Working Group Leader**, Modeling Polarized Galactic Foregrounds for Cosmic Microwave Background missions (NASA TCAN)
2022 – present **Member**, [Line Emission Mapper X-ray Probe](#)
2021 – present **Member**, [Local Group L-Band Survey](#)
2020 – present **Member**, [Galactic Australian Square Kilometre Array Pathfinder Survey](#)
2019 – 2020 **Member**, Space Infrared Telescope for Cosmology and Astrophysics (SPICA)
2017 – 2019 **Member**, Probe of Inflation and Cosmic Origins (PICO)

Professional service

2020 – 2022 **Reviewer**, NASA FINESST
2017 **Review Panelist**, NSF AAG Program
2016 – 2017 **Organizer**, Star Formation/ISM Rendezvous Seminars at Princeton University
2012 – present **Referee**, ApJ, ApJL, MNRAS, JOSS

References

Prof. Eve C. Ostriker eco@astro.princeton.edu
Department of Astrophysical Sciences, Princeton University
Prof. Rachel S. Somerville rsomerville@flatironinstitute.org
Center for Computational Astrophysics, Flatiron Institute
Prof. Greg L. Bryan gbryan@astro.columbia.edu
Department of Astronomy, Columbia University
Prof. James M. Stone jmstone@ias.edu
School of Natural Sciences, Institute for Advanced Study

List of Publications ([ADS](#), [Google Scholar](#))

Metrics for Refereed Publications (from [ADS](#) as of 2022-11-14)

count: 44 — citations: 1843 — h-index: 23

Refereed Publications as First Author (count: 15 — citations: 1263)

1. **Kim, Chang-Goo**; Ostriker, Eve C.; Fielding, Drummond B.; Smith, Matthew C. *et al.*, *A Framework for Multiphase Galactic Wind Launching Using TIGRESS*, [ApJ](#), **903**, 2020 ([arXiv:2010.09090](#)) [[16 citations](#)]
2. **Kim, Chang-Goo**; Ostriker, Eve C.; Somerville, Rachel S.; Bryan, Greg L. *et al.*, *First Results from SMAUG: Characterization of Multiphase Galactic Outflows from a Suite of Local Star-forming Galactic Disk Simulations*, [ApJ](#), **900**, 61, 2020 ([arXiv:2006.16315](#)) [[51 citations](#)]
3. **Kim, Chang-Goo**; Choi, Steve K.; Flauger, Raphael, *Dust Polarization Maps from TIGRESS: E/B Power Asymmetry and TE Correlation*, [ApJ](#), **880**, 106, 2019 ([arXiv:1901.07079](#)) [[27 citations](#)]
4. **Kim, Chang-Goo**; Ostriker, Eve C., *Numerical Simulations of Multiphase Winds and Fountains from Star-forming Galactic Disks. I. Solar Neighborhood TIGRESS Model*, [ApJ](#), **853**, 173, 2018 ([arXiv:1801.03952](#)) [[125 citations](#)]
5. **Kim, Chang-Goo**; Ostriker, Eve C., *Three-phase Interstellar Medium in Galaxies Resolving Evolution with Star Formation and Supernova Feedback (TIGRESS): Algorithms, Fiducial Model, and Convergence*, [ApJ](#), **846**, 133, 2017 ([arXiv:1612.03918](#)) [[126 citations](#)]
6. **Kim, Chang-Goo**; Ostriker, Eve C.; Raileanu, Roberta, *Superbubbles in the Multiphase ISM and the Loading of Galactic Winds*, [ApJ](#), **834**, 25, 2017 ([arXiv:1610.03092](#)) [[109 citations](#)]
7. **Kim, Chang-Goo**; Ostriker, Eve C., *Vertical Equilibrium, Energetics, and Star Formation Rates in Magnetized Galactic Disks Regulated by Momentum Feedback from Supernovae*, [ApJ](#), **815**, 67, 2015 ([arXiv:1511.00010](#)) [[84 citations](#)]
8. **Kim, Chang-Goo**; Ostriker, Eve C., *Momentum Injection by Supernovae in the Interstellar Medium*, [ApJ](#), **802**, 99, 2015 ([arXiv:1410.1537](#)) [[272 citations](#)]
9. **Kim, Chang-Goo**; Ostriker, Eve C.; Kim, Woong-Tae, *Three-dimensional Hydrodynamic Simulations of Multiphase Galactic Disks with Star Formation Feedback. II. Synthetic H I 21 cm Line Observations*, [ApJ](#), **786**, 64, 2014 ([arXiv:1403.5566](#)) [[43 citations](#)]
10. **Kim, Chang-Goo**; Basu, Shantanu, *Long-term Evolution of Decaying Magnetohydrodynamic Turbulence in the Multiphase Interstellar Medium*, [ApJ](#), **778**, 88, 2013 ([arXiv:1309.4996](#)) [[5 citations](#)]
11. **Kim, Chang-Goo**; Ostriker, Eve C.; Kim, Woong-Tae, *Three-dimensional Hydrodynamic Simulations of Multiphase Galactic Disks with Star Formation Feedback. I. Regulation of Star Formation Rates*, [ApJ](#), **776**, 1, 2013 ([arXiv:1308.3231](#)) [[164 citations](#)]
12. **Kim, Chang-Goo**; Kim, Woong-Tae; Ostriker, Eve C., *Regulation of Star Formation Rates in Multiphase Galactic Disks: Numerical Tests of the Thermal/Dynamical Equilibrium Model*, [ApJ](#), **743**, 25, 2011 ([arXiv:1109.0028](#)) [[124 citations](#)]
13. **Kim, Chang-Goo**; Kim, Woong-Tae; Ostriker, Eve C., *Galactic Spiral Shocks with Thermal Instability in Vertically Stratified Galactic Disks*, [ApJ](#), **720**, 1454, 2010 ([arXiv:1006.4691](#)) [[22 citations](#)]
14. **Kim, Chang-Goo**; Kim, Woong-Tae; Ostriker, Eve C., *Galactic Spiral Shocks with Thermal Instability*, [ApJ](#), **681**, 1148, 2008 ([arXiv:0804.0139](#)) [[52 citations](#)]
15. **Kim, Chang-Goo**; Kim, Woong-Tae; Ostriker, Eve C., *Interstellar Turbulence Driving by Galactic Spiral Shocks*, [ApJ](#), **649**, 2006 ([arXiv:astro-ph/0608161](#)) [[43 citations](#)]

Name: student advised/co-advised by me

16. [Kado-Fong, Erin](#); **Kim, Chang-Goo**; Greene, Jenny E.; Lancaster, Lachlan, *Ultra-diffuse Galaxies as Extreme Star-forming Environments. II. Star Formation and Pressure Balance in H I-rich UDGs*, *ApJ*, **939**, 101, 2022 ([arXiv:2209.05500](#))
17. [Guo, Minghao](#); Stone, James M.; **Kim, Chang-Goo**; Quataert, Eliot, *Toward Horizon-scale Accretion Onto Supermassive Black Holes in Elliptical Galaxies*, 2022 ([arXiv:2211.05131](#)), *ApJ* submitted
18. Kim, Jeong-Gyu; Gong, Munan; **Kim, Chang-Goo**; Ostriker, Eve C., *Photochemistry and Heating/Cooling of the Multiphase Interstellar Medium with UV Radiative Transfer for Magnetohydrodynamic Simulations*, 2022 ([arXiv:2210.08024](#)), *ApJS* in press
19. Ostriker, Eve C.; **Kim, Chang-Goo**, *Pressure-regulated, Feedback-modulated Star Formation in Disk Galaxies*, *ApJ*, **936**, 137, 2022 ([arXiv:2206.00681](#)) [[8 citations](#)]
20. [Choi, Woorak](#); **Kim, Chang-Goo**; Chung, Aeree, *Ram Pressure Stripping of the Multiphase ISM: A Detailed View from TIGRESS Simulations*, *ApJ*, **936**, 133, 2022 ([arXiv:2207.05263](#))
21. [Moon, Sanghyuk](#); Kim, Woong-Tae; **Kim, Chang-Goo**; Ostriker, Eve C., *Effects of Varying Mass Inflows on Star Formation in Nuclear Rings of Barred Galaxies*, *ApJ*, **925**, 99, 2022 ([arXiv:2110.14882](#)) [[5 citations](#)]
22. [Lancaster, Lachlan](#); Ostriker, Eve C.; Kim, Jeong-Gyu; **Kim, Chang-Goo**, *Star Formation Regulation and Self-pollution by Stellar Wind Feedback*, *ApJ*, **922**, 2021 ([arXiv:2110.05508](#)) [[10 citations](#)]
23. Clark, S. E.; **Kim, Chang-Goo**; Hill, J. Colin; Hensley, Brandon S., *The Origin of Parity Violation in Polarized Dust Emission and Implications for Cosmic Birefringence*, *ApJ*, **919**, 53, 2021 ([arXiv:2105.00120](#)) [[27 citations](#)]
24. [Lancaster, Lachlan](#); Ostriker, Eve C.; Kim, Jeong-Gyu; **Kim, Chang-Goo**, *Efficiently Cooled Stellar Wind Bubbles in Turbulent Clouds. II. Validation of Theory with Hydrodynamic Simulations*, *ApJ*, **914**, 90, 2021 ([arXiv:2104.07722](#)) [[34 citations](#)]
25. [Lancaster, Lachlan](#); Ostriker, Eve C.; Kim, Jeong-Gyu; **Kim, Chang-Goo**, *Efficiently Cooled Stellar Wind Bubbles in Turbulent Clouds. I. Fractal Theory and Application to Star-forming Clouds*, *ApJ*, **914**, 89, 2021 ([arXiv:2104.07691](#)) [[40 citations](#)]
26. [Moon, Sanghyuk](#); Kim, Woong-Tae; **Kim, Chang-Goo**; Ostriker, Eve C., *Star Formation in Nuclear Rings with the TIGRESS Framework*, *ApJ*, **914**, 9, 2021 ([arXiv:2104.10349](#)) [[7 citations](#)]
27. Koo, Bon-Chul; **Kim, Chang-Goo**; Park, Sangwook; Ostriker, Eve C., *Radiative Supernova Remnants and Supernova Feedback*, *ApJ*, **905**, 35, 2020 ([arXiv:2011.06322](#)) [[10 citations](#)]
28. Gong, Munan; Ostriker, Eve C.; **Kim, Chang-Goo**; Kim, Jeong-Gyu, *The Environmental Dependence of the XCO Conversion Factor*, *ApJ*, **903**, 142, 2020 ([arXiv:2009.14631](#)) [[31 citations](#)]
29. Seon, Kwang-il; **Kim, Chang-Goo**, *Ly-alpha Radiative Transfer: Monte Carlo Simulation of the Wouthuysen-Field Effect*, *ApJS*, **250**, 9, 2020 ([arXiv:2005.00238](#)) [[16 citations](#)]
30. [Mao, S. Alwin](#); Ostriker, Eve C.; **Kim, Chang-Goo**, *Cloud Properties and Correlations with Star Formation in Self-consistent Simulations of the Multiphase ISM*, *ApJ*, **898**, 52, 2020 ([arXiv:1911.05078](#)) [[15 citations](#)]
31. Kim, Woong-Tae; **Kim, Chang-Goo**; Ostriker, Eve C., *Local Simulations of Spiral Galaxies with the TIGRESS Framework. I. Star Formation and Arm Spurs/Feathers*, *ApJ*, **898**, 35, 2020 ([arXiv:2006.05614](#)) [[29 citations](#)]
32. [Kado-Fong, Erin](#); Kim, Jeong-Gyu; Ostriker, Eve C.; **Kim, Chang-Goo**, *Diffuse Ionized Gas in Simulations of Multiphase, Star-forming Galactic Disks*, *ApJ*, **897**, 143, 2020 ([arXiv:2006.06697](#)) [[18 citations](#)]

33. [Vijayan, Aditi](#); **Kim, Chang-Goo**; Armillotta, Lucia; Ostriker, Eve C. *et al.*, *Kinematics and Dynamics of Multiphase Outflows in Simulations of the Star-forming Galactic Interstellar Medium*, **ApJ**, **894**, 12, 2020 ([arXiv:1911.07872](#)) [[20 citations](#)]
34. [El-Badry, Kareem](#); Ostriker, Eve C.; **Kim, Chang-Goo**; Quataert, Eliot *et al.*, *Evolution of supernovae-driven superbubbles with conduction and cooling*, **MNRAS**, **490**, 1961, 2019 ([arXiv:1902.09547](#)) [[40 citations](#)]
35. Gong, Munan; Ostriker, Eve C.; **Kim, Chang-Goo**, *The X CO Conversion Factor from Galactic Multiphase ISM Simulations*, **ApJ**, **858**, 16, 2018 ([arXiv:1803.09822](#)) [[42 citations](#)]

Refereed Publications as Co-Author (count: 12 — citations: 301)

36. Motwani, Bhawna; Genel, Shy; Bryan, Greg L.; **Kim, Chang-Goo** *et al.*, *First Results from SMAUG: Insights into Star Formation Conditions from Spatially Resolved ISM Properties in TNG50*, **ApJ**, **926**, 139, 2022 ([arXiv:2006.16314](#)) [[7 citations](#)]
37. Pingel, N. M. *et al.* (incl. **CGK**), *GASKAP-HI pilot survey science I: ASKAP zoom observations of HI emission in the Small Magellanic Cloud*, **PASA**, **39**, 2022 ([arXiv:2111.05339](#)) [[2 citations](#)]
38. Pandya, V. *et al.* (incl. **CGK**), *Characterizing mass, momentum, energy, and metal outflow rates of multi-phase galactic winds in the FIRE-2 cosmological simulations*, **MNRAS**, **508**, 2979, 2021 ([arXiv:2103.06891](#)) [[28 citations](#)]
39. Pandya, V. *et al.* (incl. **CGK**), *First Results from SMAUG: The Need for Preventative Stellar Feedback and Improved Baryon Cycling in Semianalytic Models of Galaxy Formation*, **ApJ**, **905**, 4, 2020 ([arXiv:2006.16317](#)) [[23 citations](#)]
40. Fielding, D. B. *et al.* (incl. **CGK**), *First Results from SMAUG: Uncovering the Origin of the Multiphase Circumgalactic Medium with a Comparative Analysis of Idealized and Cosmological Simulations*, **ApJ**, **903**, 32, 2020 ([arXiv:2006.16316](#)) [[31 citations](#)]
41. Murray, Claire E.; Peek, J. E. G.; **Kim, Chang-Goo**, *Extracting the Cold Neutral Medium from H I Emission with Deep Learning: Implications for Galactic Foregrounds at High Latitude*, **ApJ**, **899**, 15, 2020 ([arXiv:2006.16490](#)) [[15 citations](#)]
42. Murray, C. E. *et al.* (incl. **CGK**), *The 21-SPONGE H I Absorption Line Survey. I. The Temperature of Galactic H I*, **ApJS**, **238**, 14, 2018 ([arXiv:1806.06065](#)) [[58 citations](#)]
43. Murray, Claire E.; Stanimirović, Snežana; **Kim, Chang-Goo**; Ostriker, Eve C. *et al.*, *Recovering Interstellar Gas Properties with Hi Spectral Lines: A Comparison between Synthetic Spectra and 21-SPONGE*, **ApJ**, **837**, 55, 2017 ([arXiv:1612.02017](#)) [[21 citations](#)]
44. Safraneck-Shrader, Chalence; Krumholz, Mark R.; **Kim, Chang-Goo**; Ostriker, Eve C. *et al.*, *Chemistry and radiative shielding in star-forming galactic discs*, **MNRAS**, **465**, 885, 2017 ([arXiv:1605.07618](#)) [[42 citations](#)]

Conferecne Proceedings

- **Kim, Chang-Goo**; Ostriker, Eve C., 2016 ([arXiv:1511.00018](#)), In P. Jablonka, P. André, and F. van der Tak, editors, *From Interstellar Clouds to Star-Forming Galaxies: Universal Processes?*, volume 315 of *IAU Symposium*, pages 38–41, **Feedback Regulated Turbulence, Magnetic Fields, and Star Formation Rates in Galactic Disks**.

- **Kim, Chang-Goo**; Ostriker, Eve C.; Kim, Woong-Tae, 2015 ([arXiv:1211.5161](https://arxiv.org/abs/1211.5161)), Highlights of Astronomy, 16:609–610, March 2015, [Numerical modeling of multiphase, turbulent galactic disks with star formation feedback](#).

List of Professional Presentations

Invited review talks

- 11/2019 **Invited Review**, *Feedback Regulated Star Formation*, Cosmic turbulence and magnetic fields: physics of baryonic matter across time and scales, Cargèse, France
- 3/2019 **Invited Review**, *Galactic Star Formation Rates*, Linking galaxies from the Epoch of initial star-formation to today, Sydney, Australia
- 8/2016 **Invited Review**, *How Do Supernovae Regulate Star Formation and Launch Galactic Winds?*, How Galaxies Form Stars, Stockholm, Sweden

Invited colloquia

- 11/2022 **Colloquium**, *Introducing TIGRESS-NCR: current status of numerical modeling of the star-forming ISM*, University of Wisconsin-Madison, Madison, WI
- 11/2022 **Colloquium**, *Introducing TIGRESS-NCR: current status of numerical modeling of the star-forming ISM*, Osaka University, Osaka, Japan
- 8/2022 **Colloquium**, *Numerical modeling of the star-forming ISM: SFRs, Outflows, and ISM energetics*, Korea Astronomy and Space Science Institute, Daejeon, Korea
- 4/2022 **Colloquium**, *Galactic Star Formation Rates and Multiphase Outflow Driving in the Star-Forming ISM*, University of Florida, Gainesville, FL
- 3/2020 **Colloquium**, *Self-Regulation of Star Formation Rates and Launching of Multiphase Galactic Winds*, University of Georgia, Athens, GA
- 2/2020 **Colloquium**, *Self-Regulation of Star Formation Rates and Launching of Multiphase Galactic Winds*, Waterloo, ON, Canada
- 3/2019 **Colloquium**, *Introducing TIGRESS: Where Gravity and Feedback Meet the Real ISM*, University of Maryland, College Park, MD
- 2/2019 **Colloquium**, *Introducing TIGRESS: Where Gravity and Feedback Meet the Real ISM*, Australia National University, Canberra, Australia
- 8/2018 **Colloquium**, *Star Formation Rates and Galactic Winds in TIGRESS*, Yonsei University, Seoul, Korea
- 8/2018 **Colloquium**, *Star Formation Rates and Galactic Winds in TIGRESS*, Korea Astronomy and Space Science Institute, Daejeon, Korea
- 5/2017 **Colloquium**, *Supernova as a Powerful Regulator of Galactic SFRs and Winds*, Osaka University, Osaka, Japan
- 2/2017 **Colloquium**, *Galactic Star Formation Rates Regulated by Star Formation Feedback*, University of California, Santa Barbara, CA
- 10/2016 **Colloquium**, *Self-Regulation of Star Formation Rates in Galactic Disks*, Shanghai Jiao Tong University, Shanghai, China
- 10/2016 **Colloquium**, *Supernova Driven Galactic Outflows*, Korea Astronomy and Space Science Institute, Daejeon, Korea
- 10/2016 **Colloquium**, *Supernova Driven Galactic Outflows*, Seoul National University, Seoul, Korea
- 9/2014 **Colloquium**, *Supernova Feedback in Multiphase Galactic Disks*, Seoul National University, Seoul, Korea
- 9/2014 **Colloquium**, *Supernova Feedback in Multiphase Galactic Disks*, Korea Astronomy and Space Science Institute, Daejeon, Korea

- 9/2014 **Colloquium**, *Supernova Feedback in Multiphase Galactic Disks*, Korea Institute for Advanced Study, Seoul, Korea
- 9/2011 **Colloquium**, *Regulation of Star Formation Rates in Galactic Disks*, Yonsei University, Seoul, Korea
- 3/2011 **Colloquium**, *Thermal and Dynamical Evolution of a Gaseous Medium and Star Formation in Disk Galaxies*, National Institute for Mathematical Sciences, Daejeon, Korea

Conference workshop seminar talks

- 8/2022 **Contributed Talk**, *How Are Galactic Star Formation Rates Regulated?*, IAU Symposium #373: Resolving the Rise and Fall of Star Formation in Galaxies, Busan, Korea
- 7/2022 **Invited Talk**, *Introducing TIGRESS-NCR:ISM energetics/phases and SFRs*, Interstellar Institute #5: With Two Eyes, Orsay, France
- 7/2022 **Contributed Talk**, *How Are Galactic Star Formation Rates Regulated?*, A Holistic View of Stellar Feedback and Galaxy Evolution, Ascona, Switzerland
- 5/2022 **Invited Talk**, *How Do Stellar Feedback Regulates Galactic Star Formation Rates and Drives Multiphase Outflows?*, CITA, Toronto, Canada
- 10/2021 **Invited Talk**, *How Are Galactic Star Formation Rates Regulated?*, CEA-Saclay, Paris, France
- 8/2021 **Invited Talk**, *Multiphase Galactic Outflows in TIGRESS*, Baltimore Wind Workshop 2021, Baltimore, MD
- 6/2021 **Invited Talk**, *The Role of Magnetic Fields in Regulating Star Formation Rates*, Midwest Magnetic Field Meeting 2021, Madison, WI (remote)
- 4/2021 **Invited Talk**, *MHD Simulations of the ISM and Synthetic Dust Polarization Maps*, Pan-Experiment Galactic Science Group Seminar, , remote
- 8/2020 **Invited Talk**, *A Perspective on the Future of ISM Simulations in the 2030s*, Cosmology with CMB-S4, University of Chicago, remote
- 6/2019 **Contributed Talk**, *Multiphase Outflows in TIGRESS*, Feedback and its Role in Galaxy Formation, Spetses, Greece
- 3/2019 **Invited Talk**, *Fast Fourier Transform and Self Gravity*, UNLV, Las Vegas, NV
- 2/2019 **Invited Talk**, *Multiphase ISM interacting with ICM*, CCA, New York, NY
- 10/2018 **Invited Talk**, *Synthetic Observations of TIGRESS: Dust Polarization Maps, HI 21cm Lines, and more*, The Milky Way in the age of Gaia, Orsay, France
- 9/2018 **Contributed Talk**, *Galactic Winds in TIGRESS*, THINKSHOP15, Potsdam, Germany
- 7/2018 **Invited Talk**, *Star Formation Rates and Galactic Winds in TIGRESS*, CCA, New York, NY
- 6/2018 **Invited Talk**, *Synthetic Polarized Dust Emission from Self-Consistent MHD Simulations*, CMB Foreground Workshop at CCA, New York, NY
- 4/2018 **Invited Talk**, *Partner of Cosmic Rays: Multiphase ISM and Galactic Outflows*, MPPC Workshop, Princeton, NJ
- 3/2018 **Invited Talk**, *Star Formation and Galactic Winds in Self-Consistent Local ISM Simulations*, Computational Galaxy Formation at Ringberg Castle, Tegernsee, Germany
- 11/2017 **Invited Talk**, *Self-Consistent MHD Simulations of the Local ISM: Synthetic Polarized Dust Emission*, CMB Foreground Workshop at UCSD, San Diego, CA
- 7/2017 **Invited Talk**, *TIGRESS: Three-phase ISM in Galaxies Resolving Evolution with Star formation and Supernova feedback*, The ISM beyond 3D, Orsay, France
- 2/2017 **Invited Talk**, *Supernova Driven Galactic Winds and Synthetic Observations using TIGRESS*, UCSB, Santa Barbara, CA
- 10/2016 **Invited Talk**, *How do Supernovae Regulate Star Formation and Launch Galactic Winds?*, 7th East-Asia Numerical Astrophysics Meeting, Beijing, China
- 5/2016 **Invited Talk**, *Star Formation and Galactic Winds Regulated by Supernovae*, Computational Galaxy Formation at Ringberg Castle, Tegernsee, Germany

- 10/2015 **Contributed Talk**, *Generation and Saturation of Magnetic Fields in the ISM Regulated by Star Formation Feedback*, Magnetic Fields in the Universe V, Cargèse, France
- 8/2015 **Contributed Talk**, *Feedback Regulated Turbulence, Magnetic Fields, and SFRs in Galactic Disks*, IAU Symposium #315, Honolulu, HI
- 4/2015 **Invited Talk**, *Feedback Regulated Turbulence, Magnetic Fields, and SFRs in Galactic Disks*, IAS, Princeton, NJ
- 9/2014 **Invited Talk**, *Feedback Regulated SFRs and HI 21cm Lines*, 6th East-Asia Numerical Astrophysics Meeting, Suwon, Korea
- 6/2014 **Invited Talk**, *Momentum Injection by Supernovae in the ISM*, KITP Program – Gravity's Loyal Opposition, Santa Barbara, CA
- 4/2013 **Contributed Talk**, *Long-Term Evolution of Decaying MHD Turbulence in the Multiphase ISM*, KAS Spring Meeting, Daecheon, Korea
- 2/2013 **Invited Talk**, *Long-Term Evolution of Decaying MHD Turbulence in the Multiphase ISM*, CITA National Fellow Meeting, Toronto, Canada
- 1/2013 **Contributed Talk**, *Long-Term Evolution of Decaying MHD Turbulence in the Multiphase ISM*, AAS Meeting #221, Long Beach, CA
- 8/2012 **Invited Talk**, *Numerical Modeling of Multiphase, Turbulent Galactic Disks with Star Formation Feedback*, IAU General Assembly – SpS12, Beijing, China