Shuiyao Huang

Contact Information

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Education

2011 - 2020 Ph.D., Astronomy, University of Massachusetts Amherst, USA
- Thesis: *Galactic Winds in Hydrodynamic Cosmological Simulations*
- Advisor: Prof. Neal Katz

2007 - 2011 B. S., Astronomy, Nanjing University, China

Research Interests

Galaxy formation, galactic winds, circumgalactic medium, hydrodynamics, cosmological simulations

Scholarships and Awards

2018 Astronomy Graduate Program Fellowship
2015 Astronomy Graduate Program Fellowship

Coding Experiences

Simulation software: GADGET/GIZMO
Programming languages: C, Python, C++, shell scripts

Conferences

Sep. 2018 Conference on *"The HI/Story of the Nearby Universe"*, Groningen, The Netherlands
Sep. 2018 15th Postdam Thinkshop - *"The role of feedback in galaxy formation: from small-scale winds to large-scale outflows"*, Potsdam, Germany
Oct. 2017 MPA-UWC workshop on *"Simulating the Cold Gas Content of Galaxies Across Cosmic Time"*, Cape Town, South Africa
Nov. 2016 MPA-UWC Workshop II: *"A Cosmological Framework for Understanding the Cold Gas Content of Galaxies"*, Cape Town, South Africa

Publications

1. **Huang, S.**, Neal Katz, Evan Scannapieco, J'Neil Cottle, Romeel Davé, David H Weinberg, Molly S Peeples, and Marcus Brüggen. A new model for including galactic winds in simulations of galaxy formation – I. Introducing the Physically Evolved Winds (PhEW) model. *MNRAS*, 497(3):2586–2604, 07 2020

2. **Huang, S.**, Neal Katz, Romeel Davé, Benjamin D. Oppenheimer, David H. Weinberg, Mark Fardal, Juna A. Kollmeier, and Molly S. Peeples. The impact of wind scalings on stellar growth and the baryon cycle in cosmological simulations. *MNRAS*, 493(1):1–28, March 2020

3. **Huang, S.**, N. Katz, R. Davé, M. Fardal, J. Kollmeier, B. D. Oppenheimer, M. S. Peeples, S. Roberts, D. H. Weinberg, P. F. Hopkins, and R. Thompson. The Robustness of Cosmological Hydrodynamic Simulation Predictions to Changes in Numerics and Cooling Physics. *ArXiv e-prints, submitted to MNRAS*, October 2018

4. H. Wang, H. J. Mo, S. Chen, Y. Yang, X. Yang, E. Wang, F. C. van den Bosch, Y. Jing, X. Kang, W. Lin, S. H. Lim, **Huang, S.**, Y. Lu, S. Li, W. Cui, Y. Zhang, D. Tweed, C. Wei, G. Li, and F. Shi. ELUCID. IV. Galaxy Quenching and its Relation to Halo Mass, Environment, and Assembly Bias. *ApJ*, 852:31, January 2018

5. J. Arthur, F. R. Pearce, M. E. Gray, P. J. Elahi, A. Knebe, A. M. Beck, W. Cui, D. Cunnama, R. Davé, S. February, **Huang, S.**, N. Katz, S. T. Kay, I. G. McCarthy, G. Murante, V. Perret, C. Power, E. Puchwein, A. Saro, F. Sembolini, R. Teyssier, and G. Yepes. nIFTy galaxy cluster simulations - V. Investigation of the cluster infall region. *MNRAS*, 464:2027–2038, January 2017

6. K. Finlator, M. K. M. Prescott, B. D. Oppenheimer, R. Davé, E. Zackrisson, R. C. Livermore, S. L. Finkelstein, R. Thompson, and **Huang, S.** The minimum halo mass for star formation at z = 6-8. *MNRAS*, 464:1633–1639, January 2017

7. S. Zhang, D. Wang, A. Foster, L. Ji, Z. Li, W. Sun, and **Huang, S.** X-ray Spectroscopy of the Andromeda Galaxy's Nuclear Feedback. In *AAS/High Energy Astrophysics Division #16*, volume 16 of *AAS/High Energy Astrophysics Division*, page 107.16, August 2017

8. K. Finlator, B. D. Oppenheimer, R. Davé, E. Zackrisson, R. Thompson, and **Huang, S.** The soft, fluctuating UVB at z $\sim$ 6 as traced by C IV, Si IV, and C II. *MNRAS*, 459:2299–2310, July 2016

9. W. Cui, C. Power, A. Knebe, S. T. Kay, F. Sembolini, P. J. Elahi, G. Yepes, F. Pearce, D. Cunnama, A. M. Beck, C. Dalla Vecchia, R. Davé, S. February, **Huang, S.**, A. Hobbs, N. Katz, I. G. McCarthy, G. Murante, V. Perret, E. Puchwein, J. I. Read, A. Saro, R. Teyssier, and R. J. Thacker. nIFTy galaxy cluster simulations - IV. Quantifying the influence of baryons on halo properties. *MNRAS*, 458:4052–4073, June 2016

10. P. J. Elahi, A. Knebe, F. R. Pearce, C. Power, G. Yepes, W. Cui, D. Cunnama, S. T. Kay, F. Sembolini, A. M. Beck, R. Davé, S. February, **Huang, S.**, N. Katz, I. G. McCarthy, G. Murante, V. Perret, E. Puchwein, A. Saro, and R. Teyssier. nIFTY galaxy cluster simulations - III. The similarity and diversity of galaxies and subhaloes. *MNRAS*, 458:1096–1116, May 2016

11. F. Sembolini, P. J. Elahi, F. R. Pearce, C. Power, A. Knebe, S. T. Kay, W. Cui, G. Yepes, A. M. Beck, S. Borgani, D. Cunnama, R. Davé, S. February, **Huang, S.**, N. Katz, I. G. McCarthy, G. Murante, R. D. A. Newton, V. Perret, E. Puchwein, A. Saro, J. Schaye, and R. Teyssier. nIFTy galaxy cluster simulations - II. Radiative models. *MNRAS*, 459:2973–2991, July 2016

12. F. Sembolini, G. Yepes, F. R. Pearce, A. Knebe, S. T. Kay, C. Power, W. Cui, A. M. Beck, S. Borgani, C. Dalla Vecchia, R. Davé, P. J. Elahi, S. February, **Huang, S.**, A. Hobbs, N. Katz, E. Lau, I. G. McCarthy, G. Murante, D. Nagai, K. Nelson, R. D. A. Newton, V. Perret, E. Puchwein, J. I. Read, A. Saro, J. Schaye, R. Teyssier, and R. J. Thacker. nIFTy galaxy cluster simulations - I. Dark matter and non-radiative models. *MNRAS*, 457:4063–4080, April 2016

13. M. A. Fardal, **Huang, S.**, and M. D. Weinberg. Generation of mock tidal streams. *MNRAS*, 452:301–319, September 2015

14. K. Finlator, R. Thompson, **Huang, S.**, R. Davé, E. Zackrisson, and B. D. Oppenheimer. The reionization of carbon. *MNRAS*, 447:2526–2539, March 2015

15. R. Thompson, R. Davé, **Huang, S.**, and N. Katz. Identifying mergers using non-parametric morphological classification at high redshifts. *ArXiv e-prints*, August 2015