XUEJIAN(JACOB) SHEN

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California Institute of Technology
1200 E. California Blvd, Pasadena, CA 91125 USA

EDUCATION

California Institute of Technology *Sept. 2018 - Present*
Ph.D. Candidate, Physics
Division of Physics, Math and Astronomy, California Institute of Technology, Pasadena, CA, USA
Academic and Research Advisor: Prof. Philip Hopkins
Thesis Title: *to be determined*

Peking University *Sept. 2014 - June 2018*
B.S., Physics
Department of Physics, Peking University, Beijing, China
Advisor: Prof. Fukun Liu
Thesis Title: "Strengthened Kozai-Lidov Oscillation, Tidal Disruption Event Rate and Gravitational Wave in Hierarchical SMBH Triplets"

EMPLOYMENT

Graduate Teaching Assistant Jan. 2018 - Present
California Institute of Technology, Pasadena, CA, USA

Undergraduate Summer Research Internship July 2017 - Sept 2017
Kavli Institute for Astrophysics and Space Research, Massachusetts Institute of Technology, Cambridge, MA, USA

RESEARCH INTERESTS

Cosmological simulations of galaxy formation; Astrophysical constraints on the nature of dark matter; Galaxies and quasars at high redshift

FORTHCOMING PAPERS

1. Shen, Xuejian; Hopkins, Philip; Necib, Lina et al. (2020), *Dissipative SIDM on FIRE: I. Density profiles and kinematic properties of dwarf galaxies*

2. Shen, Xuejian; Vogelsberger, Mark; Nelson, Dylan; Pillepich, Annalisa et al. (2020), *High redshift JWST predictions from IllustrisTNG: II. Galaxy emission luminosity functions, D4000 and dust attenuation*

PUBLICATIONS

1. Shen, Xuejian; Hopkins, Philip; Faucher-Giguère, Claude-André; Alexander, Dave; Richards, Gordon; Ross, Nicholas; Hickox, Ryan (2019), *The Bolometric Quasar Luminosity Function at z=0-7*, submitted to MNRAS

2. Wang, Yunchong; Vogelsberger, Mark; Xu, Dandan; Shen, Xuejian et al. (2019), *Early-type galaxy density profiles from IllustrisTNG - II. Evolutionary trend of the total density profile*, Monthly Notices of the Royal Astronomical Society, Volume 490, Issue 4, p.5722-5738

3. Mocz, Philip; Fialkov, Anastasia; Vogelsberger, Mark; Becerra, Fernando; Shen, Xuejian et al.

(2019), *Galaxy Formation with BECDM – II. Cosmic Filaments and First Galaxies*, submitted to MNRAS, eprint arXiv:1911.05746

4. Vogelsberger, Mark; Nelson, Dylan; Pillepich, Annalisa; Shen, Xuejian et al. (2019), *High redshift JWST predictions from IllustrisTNG: Dust modelling and galaxy luminosity functions*, submitted to MNRAS, eprint arXiv:1904.07238

5. Lovell, Mark R.; Zavala, Jesús; Vogelsberger, Mark; Shen, Xuejian; Cyr-Racine, Francis-Yan et al. (2018), *ETHOS - an effective theory of structure formation: predictions for the high-redshift Universe - abundance of galaxies and reionization*, Monthly Notices of the Royal Astronomical Society 477 (3), 2886-2899

TECHNICAL STRENGTHS

Natural Languages	Native in Mandarin. Fluent in English.
Programing Languages	Proficient in Python, Mathematica, C and Linux shell. Experience in C++, MATLAB.
Markup Languages	Proficient in LaTeX. Experience in HTML.

AWARDS

Honored Graduate 2018
Peking University

Meritorious Award 2017
Mathematical Contest in Modeling (MCM)

Silver Medal 2013
National Final of the 30th Chinese Physics Olympiad (CPHO)