

Dr. Fangzhou Jiang

BASIC INFORMATION

NATIONALITY: China	BIRTH PLACE & DATE: Wuhan, Oct. 1988
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EDUCATION AND POSITIONS

JAN 2020–2022	Troesh Scholar, Caltech Institute of Technology, Carnegie Observatories Main Collaborators: Prof. Phillip HOPKINS; Dr. Andrew BENSON
OCT 2016–DEC 2019	PBC Fellow, Hebrew University of Jerusalem Faculty host: Prof. Avishai DEKEL
JULY 2016	Ph.D. in Astronomy, Yale University Thesis: Characterizing the Substructure of Dark Matter Haloes Advisor: Prof. Frank VAN DEN BOSCH
JUN 2010	Bachelor of Science, Nanjing University Department for Intensive Instruction, Kuang Yaming Honors School Advisor: Prof. Qiusheng GU

RESEARCH THEME

TOPICS: dark-matter halo, galaxy-halo connection, near-field cosmology, feedback, galaxy morphology
METHODOLOGY: semi-analytic models, cosmological simulations, Bayesian inference and machine learning

HONORS AND AWARDS

2020	Troesh Postdoctoral Scholar (California Institute of Technology)
2018	Rosenblem Prize for good postdoctoral research in astrophysics (Hebrew University)
2017	PBC Fellowship (Planning and Budgeting Committee of Israel)
2018	Brouwer Prize for Outstanding PhD thesis (Yale University)
2015	Government Award for Outstanding Students Abroad (China Scholarship Council)
2010	Pan Xueping Scholarship (top-tier scholarship in Nanjing University)
2008	Goldman Sachs Global Leaders Program Award (IIE and Goldman Sachs Foundation)

MEDIA ATTENTION

2012	Astrobiters	A look-alike of $z \sim 2$ galaxies in our backyard
2017	Yale News	Yale-led team puts dark matter on the map

PROFESSIONAL SERVICES

Referee for MNRAS, ApJ, ApJL, and A&A
Coordinator of CosmoLunch in the Hebrew University of Jerusalem (2017-2019)

SOFTWARE DEVELOPMENT

SatGen – semi-analytic satellite galaxy generator [[GitHub link](#)]
Infer3D – Bayesian inference tool of 3D galaxy structure (based on Dynesty, in development)

PAPERS – LIST ON NEXT PAGE. [[LINK TO MY ADS LIBRARY](#)]

22 papers, **10** as leading author, **5** as second author with significant contribution, **> 500** citations

- [22] *The relationship between star-formation burstiness and the structure of galaxies and hosting haloes*
Jiang F., Freundlich J., Dekel A., Tacchella S., 2020, in prep.
- [21] *SatGen: a semi-analytical satellite galaxy generator – I. The model and its application to Local-Group satellite statistics*
Jiang F., Dekel A., Freundlich J., van den Bosch F. C., Green S. B., Hopkins P. F., Benson A., Du X., 2020, submitted to MNRAS (arXiv:2005.05974) [\[Link\]](#)
- [20] *The Dekel+ profile: a mass-dependent dark-matter density profile with flexible inner slope and analytic potential, velocity dispersion, and lensing properties*
 Freundlich J., **Jiang F.**, Dekel A., Cornuault N., Ginzburg O., Koskas R., Lapiner S. Dutton A. A., Macciò A. V., 2020, submitted to MNRAS (arXiv: 2004.08395) [\[Link\]](#)
- [19] *Origin of Star-Forming Rings around Massive Centres in Massive Galaxies at $z < 4$*
 Dekel A., Lapiner S., Ginzburg O., Freundlich J., **Jiang F.**, Lin D., Ceverino D., Primack J., Giallisco M., Ji Z., 2020, submitted to MNRAS (arXiv:2003.08984) [\[Link\]](#)
- [18] *Quenching as a Contest between Galaxy Halos and their Central Black Holes*
 Zhu C. et al. (including **Jiang F.**), 2019, submitted to ApJ (arXiv:1909.10817) [\[Link\]](#)
- [17] *The SFR-radius connection: data and implications for wind strength and halo concentration*
 Lin L. et al. (including **Jiang F.**), 2019, submitted to ApJ (arXiv:1910.10947) [\[Link\]](#)
- [16] *A Mass Threshold for Galactic Gas Discs by spin flips*
 Dekel A., Ginzburg O., **Jiang F.**, Freundlich J., Lapiner S., Ceverino D., Primack J.R., 2020, MNRAS, 493, 4126 [\[Link\]](#)
- [15] *The global star-formation law by supernova feedback*
 Dekel A., Kartick S., **Jiang F.**, Bournaud F., Krumholz M., Ceverino D., Primack J.R., 2019, MNRAS, 488, 4753 [\[Link\]](#)
- [14] *A model for core formation in dark matter haloes and ultra-diffuse galaxies by outflow episodes*
 Freundlich J., Dekel A., **Jiang F.** et al. , 2020, MNRAS, 491, 4523 [\[Link\]](#)
- [13] *Formation of ultra-diffuse galaxies in the field and in galaxy groups*
Jiang F., Dekel A., Freundlich J., Romanowsky A.J., Dutton A., Macciò A., Di Cintio A., 2019, MNRAS, 487, 5272 [\[Link\]](#) 24↑ citations
- [12] *Is the dark-matter halo spin a predictor of galaxy spin and size?*
Jiang F., Dekel A., Kneller O., Lapiner S., Cerverino D., Primack J., Faber S., et al. 2019, MNRAS, 488, 4801 [\[Link\]](#) 32↑ citations
- [11] *Statistics of Dark Matter Substructure: III. Halo-to-Halo Variance*
Jiang F. & van den Bosch F.C., 2017, MNRAS, 472, 657 [\[Link\]](#) 32↑ citations
- [10] *Mapping substructure in the HST Frontier Fields cluster lenses and in cosmological simulations*
 Natarajan P. et al. (including **Jiang F.**), 2017, MNRAS, 468, 1962 [\[Link\]](#)
- [9] *On the Segregation of Dark Matter Substructure*
 van den Bosch F.C., **Jiang F.**, Campbell D., Behroozi P., 2016, MNRAS, 455, 158 [\[Link\]](#)
- [8] *Comprehensive Assessment of the Too-Big-to-Fail Problem*
Jiang F. & van den Bosch F.C., 2015, MNRAS, 453, 3575 [\[Link\]](#) 38↑ citations
- [7] *Statistics of Dark Matter Substructure: II. Comparison of Model with Simulation Results*
 van den Bosch F.C. & **Jiang F.**, 2016, MNRAS, 458, 2870 [\[Link\]](#) 31↑ citations
- [6] *Statistics of Dark Matter Substructure: I. Model and Universal Fitting Functions*
Jiang F. & van den Bosch F.C., 2016, MNRAS, 458, 2848 [\[Link\]](#) 72↑ citations
- [5] *Coming of age in the dark sector: how dark matter halos grow their gravitational potential wells*
 van den Bosch F.C., **Jiang F.**, Hearin A.P., Campbell D., Padmanabhan N., Watson D.F., 2014, MNRAS, 445, 1713 [\[Link\]](#) 57↑ citations
- [4] *Generating merger trees for dark matter halos: a comparison of methods*
Jiang F. & van den Bosch F.C., 2014, MNRAS, 440, 193 [\[Link\]](#) 64↑ citations
- [3] *A Nearby Analog of $z \sim 2$ Compact Quiescent Galaxies with a Rotating Disk*
Jiang F., van Dokkum P., Bezanson R., Franx M., 2012, ApJL, 749, L10 [\[Link\]](#)
- [2] *Surface photometry & radial color gradients of nearby luminous early-type galaxies in SDSS Stripe 82*
Jiang F., Huang S., Gu Q., 2011, RAA, 11, 309 [\[Link\]](#)
- [1] *The Photometry of Cataclysmic Variable V1159 Ori and BZ UMa*
 Jiang L., **Jiang, F.**, Li Z., Zhao Y., Gu Q., 2010, Acta Astronomica Sinica, 51, 42 [\[Link\]](#)

CONFERENCE TALKS

10/23/2019	Workshop	Galaxy Angular Momentum Alignment 2019 Tsung-Dao Lee Institute, Shanghai
	(Invited talk)	<i>“A New Galaxy Size Predictor and A Universal Mass Threshold for Galactic Disk Formation”</i>
08/2019	Workshop	Santa Cruz Galaxy Workshop
	(contributed talk)	<i>“Infer 3D structure and shape of galaxies from deep 2D imaging”</i>
06/2019	Workshop	Spetese, Greece
	(invited talk)	<i>“The global star formation law by supernova feedback”</i>
11/2018	Workshop	Dali, China
		<i>“Is dark-matter halo spin a predictor of galaxy spin and size?”</i>
06/13/2019	Seminar	Institute de Astrophysique, Paris
05/2019	Colloquium	Tel Aviv University
11/02/2018	Colloquium	KIAA, Peking University
10/12/2018	Galaxy group meeting	Flatiron Institute, CCA
10/09/2018	Seminar	Harvard, ITC
		<i>“Formation of ultra-diffuse galaxies – with a sneak peek of a new semi-analytic model of satellite galaxies”</i>
09/03/2018	Seminar	SHAO, Shanghai
		<i>“UDG formation & statistics of dark matter substructure”</i>
08/15/2018	Workshop	The Bewildering Nature of Ultra-diffuse Galaxies , Lorentz Center, Leiden
	(invited talk)	<i>“Formation and evolution of ultra-diffuse galaxies in the field and in galaxy groups”</i>
08/06/2018	Workshop	Santa Cruz Galaxy Workshop
	(contributed talk)	<i>“Characterizing simulated ultra-diffuse galaxies in the field and galaxy groups”</i> [Video]
01/03/2018	Seminar	Technion, Haifa
		<i>“Is dark-matter halo spin a predictor of galaxy spin and size?”</i>
05/18/2017	Workshop	Galaxy-Halo Connection , Santa Barbara
	(contributed talk)	<i>“On a weak correlation between the spins of galaxies and their host halos”</i> [Video]
08/10/2016	Workshop	Santa Cruz Galaxy Workshop
	(contributed talk)	<i>“Characterizing the substructure of dark-matter halos”</i> [Video]
04/05/2016	Workshop	Dark Matter on the Smallest Scales , Lorentz Center, Leiden
	(contributed talk)	<i>“Statistics of dark matter substructure – a comprehensive assessment of the Too Big to Fail Problem”</i>
09/24/2015	Seminar	Brown, Providence
	(invited talk)	<i>“Statistics of Dark Matter Subhalos”</i>
05/15/2015	Workshop	Advanced Workshop on Cosmological Structures from Reionization to Galaxies , ICTP, Trieste
	(contributed talk)	<i>“Comprehensive assessment of the too-big-to-fail problem”</i>
06/01/2014	Seminar	NAOC, Beijing
	(invited talk)	<i>“Semi-analytic Model of dark-matter subhalos”</i>
05/29/2014	Seminar	PMO, Nanjing
	(invited talk)	<i>“Comparison of EPS halo merger trees and statistics of dark-matter subhalos”</i>
05/23/2014	Workshop	“From Dark Matter to Galaxies” – the 10th Sino-German Workshop on Galaxy Formation and Cosmology , Xi'an
	(contributed talk)	<i>“Statistics of dark matter subhalos: model and halo-to-halo Variance”</i>

TEACHING

2017,2019 Spring	HUJI	lectures	Advanced Cosmology (graduate course)
2017,2019 Spring	HUJI	project advisor	Astrophysics Seminar (undergraduate research training course)
2014, Spring	Yale	grader	ASTR 210: Stellar Astrophysics
2012, Fall	Yale	discussion	ASTR 110: Planets and Stars
2011, Fall	Yale	discussion	ASTR 130: Origins and the Search for Life in the Universe
2011, Spring	Yale	discussion	ASTR 120: Galaxies and the Universe
2010, Fall	Yale	office hour	ASTR 255/PHYS 295: Research Methods in Astrophysics

ACADEMIC REFERENCES

Prof. Dr. Avishai Dekel (faculty host)	Hebrew University of Jerusalem EMAIL: avishai.dekel@mail.huji.ac.il PHONE: Cell:+972-(0)54-8820668, Office:+972-(0)2-6584100 ADDRESS: Ross 213, Givat Ram, Jerusalem, 91904, Israel
Prof. Dr. Frank van den Bosch (thesis advisor)	Yale University EMAIL: frank.vandenbosch@yale.edu PHONE: +1-203-432-0196 ADDRESS: 52 Hillhouse Ave, New Haven, CT 06511, USA
Prof. Dr. Sandra S. Faber (collaborator)	University of California Santa Cruz, UC Observatories/Lick Observatory EMAIL: faber@ucolick.org PHONE: +1-831-459-2944 ADDRESS: 101 Center for Adaptive Optics, University of California Santa Cruz, CA 95064, USA