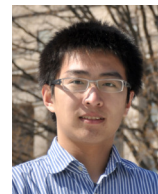


Curriculum Vitae — Liang Dai

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Employment

2015.09 – present **Postdoctoral Member** at the Institute for Advanced Study,
NASA Einstein Fellow

Education

2011.09 – 2015.07 **Ph.D. in Physics**, Johns Hopkins University, USA.
Advisor: Prof. Marc Kamionkowski
Thesis: *Primordial perturbation in the Universe: Theory, Detection and Implication For Inflation*

2007.09 – 2011.06 **B.S. in Physics**, Peking University, China, 2011.
Advisor: Prof. Chong Sheng Li
Thesis: *Exploring new physics at the LHC*

Research Interests

Gravitational lensing: strong lensing in galaxy clusters; micro-lensing;
lensing of gravitational waves; lensing of radio transients;
Gravitational waves: gravitational wave data analysis; compact binary mergers;
Cosmology: cosmic microwave background; large scale structure; 21cm cosmology;
Mathematical tools for physics: total-angular-momentum formalism;

References

Prof. Marc Kamionkowski

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Talks

Detecting Diffractive Lensing in Astrophysical Gravitational Waves

2018.10 Einstein Symposium talk at Harvard CfA, USA.

Fast parameter estimation of compact binary gravitational-wave sources

2018.06 Seminar talk invited by the KAGRA Collaboration, ICRR University of Tokyo, Japan.

Probing Cold Dark Matter Substructure With Caustic Crossing Stars In Lensing Galaxy Clusters

2018.08 Invited discussion at Workshop on WFIRST/LSST Deep Fields, Princeton University, USA.

2018.07 Astrophysics Seminar, KIAA, China.

2018.07 Astrophysics Colloquium, Tsinghua University, China.

2018.06 Astronomy–Particle–Physics–Experimental Physics–Cosmology Seminar, Kavli IPMU, Japan.

2018.04 *Shedding Light on the Dark Universe with Extremely Large Telescopes*, UCLA, USA.

New Applications of Gravitational Lensing

- 2018.02 HEP & Astrophysics Seminar, Penn State University, USA.
- 2017.12 Princeton Astrophysical Symposium, Princeton University, USA.
- 2017.11 Astrophysics Seminar, Fermilab, USA.

Probing Cluster Halos With Caustic Crossing Stars

- 2017.10 NASA Einstein Fellowship Symposium, Harvard University CfA, USA.

Caustic-Crossing at Giga-parsecs Away and Microlensing

- 2016.10 NASA Einstein Fellowship Symposium, Harvard University CfA, USA.
- Lensing magnification bias on the apparent distribution of black hole mergers*

- 2016.08 COSMO-16 conference, Ann Arbor, USA.

Gravitational Lensing of the Transient Sky

- 2016.04 TAPIR seminar, Caltech, USA.
- 2016.02 Gravity Group seminar, Princeton University, USA.

Understanding Non-Gaussianity Signatures in General Relativity

- 2016.04 Invited Talk for DAP Thesis Prize at APS April Meeting, Salt Lake City, USA.

Relativistic clustering and separate universe formalism

- 2015.10 NASA Einstein Fellowship Symposium, Harvard University CfA, USA.
- 2015.04 Astrophysical Wine & Cheese talk, Johns Hopkins University, USA.
- 2015.03 Neighborhood Workshop on Astrophysics and Cosmology, Pennsylvania State University, USA.

Conformal Fermi coordinates and separate universe formalism

- 2015.01 Cosmology seminar, Max-Planck-Institut für Astrophysik, Germany.
- 2014.12 Cosmology Lunch, Princeton University, USA.
- 2014.11 KICP Friday Seminar, University of Chicago, USA.
- 2014.10 Cosmology seminar talk, University of California, Berkely, USA.
- 2014.10 High energy physics seminar talk, University of Pennsylvania, USA.

Inflation, reheating, and gravity waves

- 2014.07 Seminar talk, NAOC, China.
- 2014.07 Seminar talk, IHEPCAS, China.
- 2014.05 Cosmology Seminar at IAS/Princeton, Princeton University, USA.

Reheating constraints on inflation

- 2014.04 Wine & Cheese seminar talk, Johns Hopkins University, USA.
- 2014.04 The Case Western-Columbia-JHU-NYU-UPenn Joint Cosmology and Particle Physics meeting, Columbia University, USA.

Rees-Sciama effect from collapsed dark matter halos

- 2014.04 Neighborhood Workshop on Astrophysics and Cosmology, Pennsylvania State University, USA.
- 2014.04 Session talk at the American Physical Society April Meeting, Savannah, USA.

New Relics of Inflation

- 2013.10 Price Prize Talk, CCAPP, Ohio State University, USA.

Digging for inflation fossils from the cosmic microwave background

2013.05 Phenomenology 2013 Symposium, University of Pittsburgh, USA.

2013.04 *Cosmology Beyond The Power Spectrum*, University of California, Berkeley, USA.

2013.04 Neighborhood Workshop on Astrophysics and Cosmology, Pennsylvania State University, USA.

One-loop helicity amplitudes for top-quark pair production in Randall-Sundrum Model

2012.05 Phenomenology 2012 Symposium, University of Pittsburgh, USA.

Dark matter: evidences and detection

2012.03 Physics Seminar Talk, Johns Hopkins University, USA.

Energy resolution parameterization for fast simulation at ILC

2010.08 Final Report, Summer Student Program, DESY, Germany.

Conferences, Workshops, & Intersession Schools

- 2018.09 Princeton-2018 CMB-S4 Collaboration Workshop, Princeton University, USA.
- 2018.08 WFIRST/LSST Deep Fields, Princeton University, USA.
- 2018.04 *Shedding Light on the Dark Universe with Extremely Large Telescopes*, UCLA, CA.
- 2017.10 IAU Symposium 338 on Gravitational Wave Astrophysics, Baton Rouge, LA.
- 2017.08 CMB Stage-4 Workshop, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.
- 2017.02 *Fast Radio Bursts: New Probes of Fundamental Physics & Cosmology*, Aspen Center for Physics, CO.
- 2017.02 *The Dawning Era of Gravitational-Wave Astrophysics*, Aspen Center for Physics, CO.
- 2017.01 *The Transient Universe with JWST*, Harvard CfA, Cambridge, MA.
- 2016.08 COSMO-16 conference, University of Michigan, Ann Arbor, MI.
- 2016.04 2016 APS April Meeting, Salt Lake City, UT.
- 2015.09 *Unbiased Cosmology From Biased Tracers* Workshop, Institute for Advanced Study, Princeton, NJ.
- 2014.05 *Primordial Gravitational Waves and Cosmology* Workshop, Caltech, Pasadena, CA.
- 2014.05 *Phenomenology 2014* Symposium, University of Pittsburgh, Pittsburgh, PA.
- 2014.04 2014 APS April Meeting, Savannah, SC.
- 2014.04 Neighborhood Workshop on Astrophysics and Cosmology, Penn State University, State College, PA.
- 2014.01 Mini-Workshop on Non-Gaussianity, Princeton University, Princeton, NJ.
- 2013.06 BVCSPIN Summer School in Particle Physics and Cosmology, Zhejiang University, Hangzhou, China.
- 2013.06 2013 Shanghai Particle Physics and Cosmology Symposium, Shanghai, China.
- 2013.05 *Phenomenology 2013* Symposium, University of Pittsburgh, Pittsburgh, PA.
- 2013.04 *Cosmology Beyond The Power Spectrum* Workshop, University of California, Berkeley, CA.
- 2013.04 Neighborhood Workshop on Astrophysics and Cosmology, Penn State University, State College, PA.
- 2013.03 Case-Columbia-JHU-NYU-Penn Meeting in Cosmology and Particle Physics, University of Pennsylvania, Philadelphia, PA.
- 2012.08 XXVIII General Assembly of the International Astronomical Union, Beijing, China.
- 2012.06 Theoretical Advanced Study Institute in elementary Particle Physics (TASI), University of Colorado, Boulder, CO.
- 2012.05 *Phenomenology 2012* Symposium, University of Pittsburgh, Pittsburgh, PA.

Honors, Awards, & Fellowships

- 2015 The Einstein Postdoctoral Fellowship.
- 2013 Chinese Government Award for Outstanding Self-financed Students Abroad.
- 2013 Dr. Pliny A. and Margaret H. Price Prize,
the Ohio State University's Center for Cosmology and AstroParticle Physics.
- 2013 PITT PACC Travel Awards, University of Pittsburgh.
- 2012 William Gardner Fellowship, Johns Hopkins University.
- 2011 Rowland Research Fellowship, Johns Hopkins University.
- 2010 Robin Li Scholarship, Peking University.
- 2009 Chinese National Scholarship, Peking University.
- 2009 Peking University Model Student, Peking University.
- 2008 Ke-Cheng Alumni Scholarship, Peking University.

Referee/Reviewer

- *Nature Communications & Nature Astronomy*
- *Physical Review Letters*.
- *Physical Review D*.
- *Physics Reports*
- *Journal of Cosmology and Astroparticle Physics*
- *Physica D: Nonlinear Phenomenon*

Teaching

Johns Hopkins University

- 2014.02 – 2014.05 171.606 Graduate Quantum Mechanics II.
- 2012.09 – 2012.12 173.111 General Physics I: conference and lab.

Other Activities

- 2014.04 Challengers physics contest for K12,
2014 Annual Physics Fair of the Department of Physics and Astronomy, Johns Hopkins University.
- 2013.04 Non-Newtonian fluid demonstration,
2013 Annual Physics Fair of the Department of Physics and Astronomy, Johns Hopkins University.
- 2012.04 Liquid icecream demonstration,
2012 Annual Physics Fair of the Department of Physics and Astronomy, Johns Hopkins University.

Computer Skills

OS: Windows, Linux.

Programming: C/C++, Fortran, Python, Mathematica, Html, FORM.

Last updated: October 3, 2018