

A. Liam Fitzpatrick

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Professional Preparation	THE UNIVERSITY OF CHICAGO B.S. in Physics and Mathematics, June 2004	2000 - 2004
	HARVARD UNIVERSITY Ph.D. in Physics, June 2008	2004 - 2008
	BOSTON UNIVERSITY Postdoctoral Fellow in Physics	2008 - 2011
	STANFORD UNIVERSITY Research Associate	2011 - 2015
Appointments	BOSTON UNIVERSITY Assistant Professor of Physics	2015 - Present
Honors	National Science Foundation Graduate Research Fellowship	2006 - 2008
	John Haeseler Lewis Award, The University of Chicago Dept. of Physics	
	Grainger Senior Scholar Award, The University of Chicago Dept. of Physics	
	Goldwater Scholar	
	National Merit Scholar	
Synergistic activities	Texas Robert C. Byrd Scholar	
	Co-organizer, Aspen Workshop on “The LHC Shows the Way,” July 22 - August 12, 2012 Referee for peer-reviewed journals: Journal of High Energy Physics, Physical Review B, Physical Review D, Physical Review Letters.	
Advisor	Lisa Randall, Harvard U.	

Publications

- “Exact Virasoro Blocks from Wilson Lines and Background-Independent Operators”
with Jared Kaplan, Daliang Li, and Junpu Wang
arXiv:1612.06385
- “Late-Time Behavior of Virasoro Blocks and a Classification of Semiclassical Saddles”
with Jared Kaplan
arXiv:1609.07153
- “Closure of the Operator Product Expansion in the Non-Unitary Bootstrap,”
with Ilya Esterlis and David Ramirez.
JHEP **1611** (2016) 030
arXiv:1606.07458
- “Degenerate Operators and the $1/c$ Expansion: Lorentzian Resummations, High Order Computations, and Super-Virasoro Blocks,”
with Hongbin Chen, Jared Kaplan, Daliang Li, and Junpu Wang.
arXiv:1606.02659
- “Universal Bounds on Charged States in 2d CFT and 3d Gravity,”
with Nathan Benjamin, Ethan Dyer, and Shamit Kachru.
JHEP **1608**, 041 (2016)
arXiv:1603.09745
- “On Information Loss in $\text{AdS}_3/\text{CFT}_2$,”
with Jared Kaplan, Daliang Li, and Junpu Wang.
JHEP **1605**, 109 (2016)
arXiv:1603.08925
- “Small Black Holes and Near-Extremal CFTs,”
with Nathan Benjamin, Ethan Dyer, Alexander Maloney, and Eric Perlmutter.
JHEP **1608**, 023 (2016)
arXiv:1603.08925
- “A Quantum Correction to Chaos,”
with Jared Kaplan.
JHEP **1605**, 070 (2016)
arXiv:1601.06164
- “Conformal Blocks Beyond the Semi-Classical Limit,”
with Jared Kaplan.
JHEP **1605**, 075 (2016)
arXiv:1512.03052
- “Hawking from Catalan,”
with Jared Kaplan, Matthew Walters, and Junpu Wang.
JHEP **1605**, 069 (2016)
arXiv:1510.00014
- “An Extremal $N = 2$ Superconformal Theory,”
with Nathan Benjamin, Ethan Dyer, and Shamit Kachru.
J. Phys A48, (2015), 295401
arXiv:1507.00004
- “Eikonalization of Conformal Blocks,”
with Jared Kaplan and Matthew Walters.
JHEP **1509**, 019 (2015)
arXiv:1504.01737

- “Virasoro Conformal Blocks and Thermalities from Classical Background Fields,”
with Jared Kaplan and Matthew Walters.
JHEP **1511**, 200 (2015)
arXiv:1501.05315
- “Enhanced Pairing of Quantum Critical Metals near $d = 3 + 1$,”
with Shamit Kachru, Jared Kaplan, Srinivas Raghu, Gonzalo Torroba, and Huajia Wang.
Phys.Rev. B92 (2015) 4, 045118
arXiv:1410.6814
- “Aspects of Renormalization in Finite Density Field Theory, ”
with Gonzalo Torroba and Huajia Wang.
Phys.Rev. B91 (2015) 195135
arXiv:1410.6811
- “Universality of Long-Distance AdS Physics from the CFT Bootstrap,”
with Jared Kaplan and Matthew Walters.
JHEP **1408** (2014) 145
arXiv:1403.6829
- “Covariant Approaches to Superconformal Blocks,”
with Jared Kaplan, Zuhair Khandker, Daliang Li, David Poland, and David Simmons-Duffin.
JHEP **1408** (2014) 129
arXiv:1402.1167
- “Non-Fermi Liquid Fixed Point in a Wilsonian theory of Quantum Critical Metals,”
with Shamit Kachru, Jared Kaplan, and Srinivas Raghu.
Phys. Rev. B88 (2013), 125116
arXiv:1307.0004
- “Weakly Interacting Massive Particle-Nucleus Elastic Scattering Response,”
with Nikhil Anand and Wick Haxson.
Phys. Rev. C89 (2014), 065501
arXiv:1308.6288
- “Non-Fermi Liquid Behavior of Large N_B Quantum Critical Metals,”
with Shamit Kachru, Jared Kaplan, and Srinivas Raghu.
Phys. Rev. B89 (2014), 165114
arXiv:1312.3321
- “Conformal Blocks in the Large D Limit,”
with Jared Kaplan and David Poland.
JHEP **1308** (2013) 107
arXiv:1305.0004
- “Decoupling of High Dimension Operators from the Low Energy Sector in Holographic Models,”
with Jared Kaplan, Emanuel Katz, and Lisa Randall.
arXiv:1304.3458
- “The Analytic Bootstrap and AdS Superhorizon Locality,”
with Jared Kaplan, David Poland, and David Simmons-Duffin.
JHEP **1312** (2013) 004
arXiv:1212.3616

- “Model-Independent Direct Detection Analyses,”
with Wick Haxton, Emanuel Katz, Nicholas Lubbers, and Yiming Xu.
arXiv:1211.2818
- “AdS Field Theory from Conformal Field Theory,”
with Jared Kaplan.
JHEP **1302** (2013) 054
arXiv:1208.0337
- “A New Theory of Anyons,”
with Shamit Kachru, Jared Kaplan, Emanuel Katz, and Jay Wacker.
arXiv:1205.6816
- “The Effective Field Theory of Dark Matter Direct Detection,”
with Wick Haxton, Emanuel Katz, Nicholas Lubbers, and Yiming Xu.
JCAP **1302** (2013) 004
arXiv:1203.3542
- “Unitarity and the Holographic S-Matrix,”
with Jared Kaplan.
JHEP **1210** (2012) 032
arXiv:1112.4845
- “Analyticity and the Holographic S-Matrix,”
with Jared Kaplan.
JHEP **1210** (2012) 127
arXiv:1111.6972
- “A Natural Language for AdS/CFT Correlators,”
with Jared Kaplan, João Penedones, Suvrat Raju, and Balt van Rees.
JHEP **1111** (2011) 095
arXiv:1107.1499
- “Anomalous Dimensions of Non-Chiral Operators from AdS/CFT,”
with David Shih.
JHEP **1110**, 113 (2011).
arXiv:1104.5013
- “Scattering States in AdS/CFT,”
with Jared Kaplan.
arXiv:1104.2597
- “Effective Conformal Theory and the Flat-space Limit of AdS,”
with Emanuel Katz, David Poland, and David Simmons-Duffin.
JHEP **1107** (2011) 023
arXiv:1007.2412
- “Dark Moments and the DAMA/CoGeNT Puzzle,”
with Kathryn Zurek.
Phys.Rev.D82:075004,2010.
arXiv:1007.5325
- “Discovering Asymmetric Dark Matter with Anti-Neutrinos,”
with Brian Feldstein.
JCAP 1009(2010)005
arXiv:1003.5662.

- “Implications of CoGeNT and DAMA for Light WIMP Dark Matter,”
Phys.Rev.D81(2010)115005.
with Dan Hooper and Kathryn Zurek.
arXiv:1003.0014
- “A Simple Explanation for DAMA with Moderate Channeling,”
with Brian Feldstein, Emanuel Katz, and Brock Tweedie.
JCAP 1003:029,2010.
arXiv:0910.0007
- “Form Factor Dark Matter,”
with Brian Feldstein and Emanuel Katz.
JCAP 1001:020,2010.
arXiv:0908.2991
- “A New Perspective on Galaxy Clustering as a Cosmological Probe: General Relativistic Effects,”
with Jaiyul Yoo and Matias Zaldarriaga.
Phys.Rev.D80:083514,2009.
arXiv:0907.0707
- “Contributions to the Dark Matter 3-Point Function from the Radiation Era,”
with Leonardo Senatore and Matias Zaldarriaga.
JCAP 1005:004,2010.
arXiv:0902.2814
- “Sequestering CP Violation and GIM-Violation with Warped Extra Dimensions,”
with Clifford Cheung and Lisa Randall.
JHEP 0801:069,2008
arXiv:0711.4421
- “(Extra)Ordinary Gauge Mediation,”
with Clifford Cheung and David Shih.
JHEP 0807:054,2008.
arXiv:0710.3585
- “Flavor Anarchy in a Randall-Sundrum Model with 5D Minimal Flavor Violation and a Low Kaluza-Klein Scale,”
with Gilad Perez and Lisa Randall.
Phys.Rev.Lett.100:171604,2008.
arXiv:0710.1869
- “On the Consistency Relation of the 3-point Function in Single Field Inflation,”
with Clifford Cheung, Jared Kaplan, and Leonardo Senatore.
JCAP 0802:021,2008.
arXiv:0709.0293
- “The Effective Field Theory of Inflation,”
with Clifford Cheung, Paulo Creminelli, Jared Kaplan, and Leonardo Senatore.
JHEP 0803:014,2008
arXiv:0709.0293
- “Searching for the Kaluza-Klein Graviton in Bulk RS Models,”
with Jared Kaplan, Lisa Randall, and Lian-Tao Wang.
JHEP09(2007)013
hep-ph/0701150

- “On the Existence and Dynamics of Braneworld Black Holes,”
with Lisa Randall and Toby Wiseman.
JHEP **0611** 033, (2006)
hep-th/0608208
- “Localizing Gravity on the Triple Intersection of 7-Branes in 10D,”
with Lisa Randall.
JHEP **0601** 113, (2006)
hep-th/0512247
- “First Measurements of the Polarization of the Cosmic Microwave Background Radiation at Small Angular Scales from CAPMAP,”
with D. Barkats, C. Bischoff, P. Farese, T. Gaier, J.O. Gundersen, M.M. Hedman, L. Hyatt, J.J. McMahon, D. Samtleben S.T. Staggs, Keith Vanderlinde, and B. Winstein.
Astrophys.J. 619 (2005) L127-L130
astro-ph/0409380