

Jared Kaplan

Associate Professor
Department of Physics & Astronomy
Johns Hopkins University

Appointments	JOHNS HOPKINS UNIVERSITY	
	Associate Professor	2018 - present
	Assistant Professor	2012 - 2018
	STANFORD INSTITUTE FOR THEORETICAL PHYSICS	9/2017 - 12/2017
	Visiting Professor	
	UC DAVIS DEPARTMENT OF PHYSICS	1/2018 - 6/2018
	Visiting Professor	
Professional Preparation	STANFORD UNIVERSITY	2012 - 2013
	Postdoctoral Fellow	
	SLAC NATIONAL ACCELERATOR LABORATORY	2009 - 2012
	Research Associate	
	HARVARD UNIVERSITY	2005 - 2009
	Ph.D. in Physics	
	Advisor: Nima Arkani-Hamed	
	STANFORD UNIVERSITY	2001 - 2005
	B.S. in Physics and Mathematics	
Honors	Simons Collaboration on the Non-Perturbative Bootstrap	2016-2020
	NSF CAREER Grant	2015-2020
	Johns Hopkins Catalyst Award	2016-2017
	Alfred P. Sloan Research Fellow	2014-2016
	Kavli Fellow (Frontiers of Science)	2016
	Hertz Foundation Graduate Fellowship	2005-2009
	National Science Foundation Graduate Research Fellowship	2005-2008
	James Mills Pierce Fellowship, Harvard	2005
	United States Physics Team	2001
Current Support	Agency: Simons Foundation	
	Title: Simons Collaboration on the Non-Perturbative Bootstrap	
	Award Dates: 9/1/2016 - 8/31/2020	
	Total Award Amount (local per PI): \$480,000	
	Agency: NSF	
	Title: CAREER: Conformal Field Theory and Quantum Gravity from the Bottom-Up	
Award Number: PHY-1454083		
Award Dates: 9/1/2015 - 8/31/2020		
Total Award Amount: \$400,000		
PhD Students	H. Chen, N. Anand (2018), C. Hussong (2018), S. Cantrell (2015)	

Postdocs Sandipan Kundu, Ethan Dyer (Google 2018–), Daliang Li (Harvard 2018–), Junpu Wang (Yale 2016–)

Synergistic activities Organizer of “Quantum Gravity and the Bootstrap” Conference at JHU
Co-organizer for Simons Non-Perturbative Bootstrap Workshops
Co-organizer of Johns Hopkins Workshops in Theoretical Physics
Referee for peer-reviewed journals: Journal of High Energy Physics, Physical Review D

Invited Talks

- **(2017-18) The Exact AdS₃ Propagator and the Fate of Locality**
Simons Bootstrap Conference
New York University
ICTS Bangalore
Tata Institute Mumbai
Caltech
UC Davis
University of British Columbia
- **(2017) The Information Paradox and Two Dimensional CFT**
Conference “Strings 2017”, Tel Aviv
Niels Bohr Institute Copenhagen
UC Berkeley
Stanford University
KITP Conference “Resurgent Asymptotics in Physics and Mathematics”
- **(2016) On Information Loss in Two Dimensional CFT**
Institute for Advanced Study Princeton
Cornell University
University of Kentucky
McGill University
CERN
Stanford University
UC Berkeley
UC Santa Barbara
- **(2015) What is the Temperature of a Pure State?**
Columbia University
Caltech
YITP-KIAS Joint workshop on “Geometry and Strings”
University of Minnesota
- **(2015) Virasoro Conformal Blocks and Thermality**
Princeton University
Aspen Winter Conference on “Progress and Applications of Quantum Field Theory”
Aspen Summer Workshop
Stony Brook Simons Summer Workshop
- **(2014) Universality of Long Distance AdS Physics from the CFT Bootstrap**
Conference “QFT Beyond Perturbation Theory” at Kavli Institute for Theoretical Physics
New York University
Columbia University
Boston University
Seoul National University
Conference on “Back to the Bootstrap”

Publication List

Jared Kaplan

46. **“The AdS₃ Propagator and the Fate of Locality”**
H. Chen, A. L. Fitzpatrick, J. Kaplan and D. Li.
arXiv:1712.02351 [hep-th]
Submitted to JHEP
45. **“An Exact Operator That Knows Its Location”**
N. Anand, H. Chen, A. L. Fitzpatrick, J. Kaplan and D. Li.
arXiv:1708.04246 [hep-th]
Submitted to JHEP
44. **“A Numerical Approach to Virasoro Blocks and the Information Paradox”**
H. Chen, C. Hussong, J. Kaplan and D. Li.
arXiv:1703.09727 [hep-th]
DOI:10.1007/JHEP09(2017)102
JHEP **1709**, 102 (2017)
43. **“Exact Virasoro Blocks from Wilson Lines and Background-Independent Operators”**
A. L. Fitzpatrick, J. Kaplan, D. Li and J. Wang.
arXiv:1612.06385 [hep-th]
DOI:10.1007/JHEP07(2017)092
JHEP **1707**, 092 (2017)
42. **“On the Late-Time Behavior of Virasoro Blocks and a Classification of Semiclassical Saddles”**
A. L. Fitzpatrick and J. Kaplan.
arXiv:1609.07153 [hep-th]
DOI:10.1007/JHEP04(2017)072
JHEP **1704**, 072 (2017)
41. **“Degenerate Operators and the $1/c$ Expansion: Lorentzian Resummations, High Order Computations, and Super-Virasoro Blocks”**
H. Chen, A. L. Fitzpatrick, J. Kaplan, D. Li and J. Wang.
arXiv:1606.02659 [hep-th]
DOI:10.1007/JHEP03(2017)167
JHEP **1703**, 167 (2017)
40. **“On information loss in AdS₃/CFT₂”**
A. L. Fitzpatrick, J. Kaplan, D. Li and J. Wang.
arXiv:1603.08925 [hep-th]
DOI:10.1007/JHEP05(2016)109
JHEP **1605**, 109 (2016)
39. **“A Quantum Correction To Chaos”**
A. L. Fitzpatrick and J. Kaplan.
arXiv:1601.06164 [hep-th]
DOI:10.1007/JHEP05(2016)070
JHEP **1605**, 070 (2016)
38. **“Conformal Blocks Beyond the Semi-Classical Limit”**
A. L. Fitzpatrick and J. Kaplan.
arXiv:1512.03052 [hep-th]
DOI:10.1007/JHEP05(2016)075
JHEP **1605**, 075 (2016)

37. **“Hawking from Catalan”**
A. L. Fitzpatrick, J. Kaplan, M. T. Walters and J. Wang.
arXiv:1510.00014 [hep-th]
DOI:10.1007/JHEP05(2016)069
JHEP **1605**, 069 (2016)
36. **“Eikonalization of Conformal Blocks”**
A. L. Fitzpatrick, J. Kaplan, M. T. Walters and J. Wang.
arXiv:1504.01737 [hep-th]
DOI:10.1007/JHEP09(2015)019
JHEP **1509**, 019 (2015)
35. **“Virasoro Conformal Blocks and Thermality from Classical Background Fields”**
A. L. Fitzpatrick, J. Kaplan and M. T. Walters.
arXiv:1501.05315 [hep-th]
10.1007/JHEP11(2015)200
JHEP **1511**, 200 (2015)
34. **“Enhanced Pairing of Quantum Critical Metals Near $d=3+1$ ”**
A. L. Fitzpatrick, S. Kachru, J. Kaplan, S. Raghu, G. Torroba and H. Wang.
arXiv:1410.6814 [cond-mat.str-el]
10.1103/PhysRevB.92.045118
Phys. Rev. B **92**, no. 4, 045118 (2015)
33. **“An Effective Theory for Holographic RG Flows”**
J. Kaplan and J. Wang.
arXiv:1406.4152 [hep-th]
10.1007/JHEP02(2015)056
JHEP **1502**, 056 (2015)
32. **“Universality of Long-Distance AdS Physics from the CFT Bootstrap”**
A. L. Fitzpatrick, J. Kaplan and M. T. Walters.
JHEP 1408 (2014) 145, arXiv:1403.6829 [hep-th]
31. **“Covariant Approaches to Superconformal Blocks”**
A. L. Fitzpatrick, J. Kaplan, Z. U. Khandker, D. Li, D. Poland and D. Simmons-Duffin.
JHEP 1408 (2014) 129, arXiv:1402.1167 [hep-th]
30. **“Non-Fermi liquid behavior of large N_B quantum critical metals”**
A. L. Fitzpatrick, S. Kachru, J. Kaplan and S. Raghu.
arXiv:1312.3321 [cond-mat.str-el]
10.1103/PhysRevB.89.165114
Phys. Rev. B **89**, 165114 (2014)
29. **“Non-Fermi liquid fixed point in a Wilsonian theory of quantum critical metals”**
A. L. Fitzpatrick, S. Kachru, J. Kaplan and S. Raghu.
arXiv:1307.0004 [cond-mat.str-el]
10.1103/PhysRevB.88.125116
Phys. Rev. B **88**, 125116 (2013)
28. **“Conformal Blocks in the Large D Limit”**
A. L. Fitzpatrick, J. Kaplan and D. Poland.
arXiv:1305.0004 [hep-th]
10.1007/JHEP08(2013)107
JHEP **1308**, 107 (2013)

27. **“Decoupling of High Dimension Operators from the Low Energy Sector in Holographic Models”**
A. L. Fitzpatrick, J. Kaplan, E. Katz and L. Randall.
arXiv:1304.3458 [hep-th]
26. **“The Analytic Bootstrap and AdS Superhorizon Locality”**
A. L. Fitzpatrick, J. Kaplan, D. Poland and D. Simmons-Duffin.
arXiv:1212.3616 [hep-th]
10.1007/JHEP12(2013)004
JHEP **1312**, 004 (2013)
25. **“AdS Field Theory from Conformal Field Theory”**
A. L. Fitzpatrick and J. Kaplan.
arXiv:1208.0337 [hep-th]
10.1007/JHEP02(2013)054
JHEP **1302**, 054 (2013)
24. **“A New Theory of Anyons”**
A. L. Fitzpatrick, S. Kachru, J. Kaplan, E. Katz and J. G. Wacker.
arXiv:1205.6816 [hep-th]
23. **“Unitarity and the Holographic S-Matrix”**
A. L. Fitzpatrick and J. Kaplan.
arXiv:1112.4845 [hep-th]
10.1007/JHEP10(2012)032
JHEP **1210**, 032 (2012)
22. **“Analyticity and the Holographic S-Matrix”**
A. L. Fitzpatrick and J. Kaplan.
arXiv:1111.6972 [hep-th]
10.1007/JHEP10(2012)127
JHEP **1210**, 127 (2012)
21. **“Heavy Flavor Simplified Models at the LHC”**
R. Essig, E. Izaguirre, J. Kaplan and J. G. Wacker.
arXiv:1110.6443 [hep-ph]
10.1007/JHEP01(2012)074
JHEP **1201**, 074 (2012)
20. **“A Natural Language for AdS/CFT Correlators”**
A. L. Fitzpatrick, J. Kaplan, J. Penedones, S. Raju and B. C. van Rees.
arXiv:1107.1499 [hep-th]
10.1007/JHEP11(2011)095
JHEP **1111**, 095 (2011)
19. **“Simplified Models for LHC New Physics Searches”**
D. Alves *et al.* [LHC New Physics Working Group Collaboration].
arXiv:1105.2838 [hep-ph]
10.1088/0954-3899/39/10/105005
J. Phys. G **39**, 105005 (2012)
18. **“Scattering States in AdS/CFT”**
A. L. Fitzpatrick and J. Kaplan.
arXiv:1104.2597 [hep-th]
17. **“LHC Predictions from a Tevatron Anomaly in the Top Quark Forward-Backward Asymmetry”**
Y. Bai, J. L. Hewett, J. Kaplan and T. G. Rizzo.

- arXiv:1101.5203 [hep-ph]
10.1007/JHEP03(2011)003
JHEP **1103**, 003 (2011)
16. **“Discovering New Light States at Neutrino Experiments”**
R. Essig, R. Harnik, J. Kaplan and N. Toro.
arXiv:1008.0636 [hep-ph]
10.1103/PhysRevD.82.113008
Phys. Rev. D **82**, 113008 (2010)
 15. **“On the Origin of Light Dark Matter Species”**
R. Essig, J. Kaplan, P. Schuster and N. Toro.
arXiv:1004.0691 [hep-ph]
 14. **“Unraveling $L(n,k)$: Grassmannian Kinematics”**
J. Kaplan.
arXiv:0912.0957 [hep-th]
10.1007/JHEP03(2010)025
JHEP **1003**, 025 (2010)
 13. **“A Duality For The S Matrix”**
N. Arkani-Hamed, F. Cachazo, C. Cheung and J. Kaplan.
arXiv:0907.5418 [hep-th]
10.1007/JHEP03(2010)020
JHEP **1003**, 020 (2010)
 12. **“The S-Matrix in Twistor Space”**
N. Arkani-Hamed, F. Cachazo, C. Cheung and J. Kaplan.
arXiv:0903.2110 [hep-th]
10.1007/JHEP03(2010)110
JHEP **1003**, 110 (2010)
 11. **“What is the Simplest Quantum Field Theory?”**
N. Arkani-Hamed, F. Cachazo and J. Kaplan.
arXiv:0808.1446 [hep-th]
10.1007/JHEP09(2010)016
JHEP **1009**, 016 (2010)
 10. **“On Tree Amplitudes in Gauge Theory and Gravity”**
N. Arkani-Hamed and J. Kaplan.
arXiv:0801.2385 [hep-th]
10.1088/1126-6708/2008/04/076
JHEP **0804**, 076 (2008)
 9. **“On the consistency relation of the 3-point function in single field inflation”**
C. Cheung, A. L. Fitzpatrick, J. Kaplan and L. Senatore.
arXiv:0709.0295 [hep-th]
10.1088/1475-7516/2008/02/021
JCAP **0802**, 021 (2008)
 8. **“The Effective Field Theory of Inflation”**
C. Cheung, P. Creminelli, A. L. Fitzpatrick, J. Kaplan and L. Senatore.
arXiv:0709.0293 [hep-th]
10.1088/1126-6708/2008/03/014
JHEP **0803**, 014 (2008)

7. **“The Sloan Digital Sky Survey-II Supernova Survey: Technical Summary”**
J. A. Frieman, B. Bassett, A. Becker, C. Choi, D. Cinabro, D. F. DeJongh, D. L. Depoy and M. Doi *et al.*
arXiv:0708.2749 [astro-ph]
10.1088/0004-6256/135/1/338
Astron. J. **135**, 338 (2008)
6. **“The Plasma puddle as a perturbative black hole”**
C. Cheung and J. Kaplan.
arXiv:0704.1146 [hep-th]
10.1088/1126-6708/2007/06/024
JHEP **0706**, 024 (2007)
5. **“Searching for the Kaluza-Klein Graviton in Bulk RS Models”**
A. L. Fitzpatrick, J. Kaplan, L. Randall and L. -T. Wang.
hep-ph/0701150
10.1088/1126-6708/2007/09/013
JHEP **0709**, 013 (2007)
4. **“Avoiding an Empty Universe in RS I Models and Large-N Gauge Theories”**
J. Kaplan, P. C. Schuster and N. Toro.
hep-ph/0609012
3. **“Dark matter generation and split supersymmetry”**
J. Kaplan.
hep-ph/0601262
10.1088/1126-6708/2006/10/065
JHEP **0610**, 065 (2006)
2. **“The Fall 2004 SDSS Supernova Survey”**
M. Sako *et al.* [SDSS Collaboration].
astro-ph/0504455
eConf C **041213**, 1424 (2004)
1. **“Extracting data from behind horizons with the AdS / CFT correspondence”**
J. Kaplan.
hep-th/0402066