

# ANASTASIA VOLOVICH

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## PERSONAL DETAILS

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## EDUCATION

**Ph.D.**, Physics, Harvard University, 2002

Advisor: Andrew Strominger

Thesis: Holography for Coset Spaces and Noncommutative Solitons

**B.A. & M.A.**, Physics: Moscow State University, Russia, 1993-1999  
(highest honors, red diploma)

Mathematical College, Independent University of Moscow, Russia, 1993-1999

Physics & Mathematics MIPT (Fiztech) correspondence High School #2, Moscow, 1990-1993 (distinction in mathematics)

## PROFESSIONAL APPOINTMENTS

Professor of Physics, Brown University, 2016–present

Visiting Scientist, CERN Theory Group, 2013-present

Associate in the Department of Physics, Harvard University, 2024-present

Visiting Scholar, Harvard University, 2023-2024

Member, Institute for Advanced Study, Princeton, 2017-2018, 2011, 2005–2006

Associate Professor of Physics, Brown University, 2011–2016

Scientific Associate, CERN, 2012–2013

Richard and Edna Salomon Assistant Professor of Physics, Brown, 2006–2011

Postdoc, Kavli Institute for Theoretical Physics, Santa Barbara, 2002–2005

Visiting Scientist, LPTHE, Paris, Winter 1998, Summers 1998, 1999, 2001

Assistant, Landau Institute for Theoretical Physics, Russia, 1996-1999

Research and Teaching Assistant, Harvard University, 1998-2002

Instructor, Physics & Mathematics High School #2, Moscow, 1995-1997

## **ACADEMIC HONORS**

Bershadsky Distinguished Visiting Fellowship, Harvard University, 2023

Elected Fellow of the American Physical Society, 2019

IBM Einstein Fellowship, Institute for Advanced Study, Princeton, 2017

Blavatnik National Finalist, Blavatnik Foundation, 2018, 2017, 2016

Simons Investigator in Physics, Simons Foundation, 2015

Simons Fellowship in Theoretical Physics, 2011

Early Career Research Award, Department of Energy, 2011

Sloan Research Fellowship, Alfred P. Sloan Foundation, 2011

PECASE Award, Office of President of the United States, White House, 2008

Career Development Award, NSF ADVANCE Program, Brown University, 2009

CAREER Award, National Science Foundation, 2007

Richard and Edna Salomon Professorship, Brown University, 2006

William D. Loughlin Membership, Institute for Advanced Study, Princeton, 2005

Van Vleck Award, Harvard University (for outstanding prospective student), 1998

Khoklov Prize, Moscow State University (for the best thesis of the university), 1999

Soros Foundation Fellowship foundation (for outstanding student), 1996-1998

Fellowship of Government of Moscow (for all As), Moscow State University, 1995-1999

Prizes in mathematics and physics competitions, Moscow, 1989-1993

## **RESEARCH GRANTS**

1. Simons Investigator, Simons Foundation, total award \$1,440,000, 2015-2025
2. Department of Energy Grant DE-SC0010010 *HEP Theory Research Program: Theory Task F*, Co-PI with M. Spradlin, total award \$576,000, 2022-2025

3. Department of Energy Grant DE-SC0010010 (Task A) *Program in Theoretical High Energy Physics*, Co-PI with J. Fan, A. Jevicki, D. Lowe, M. Spradlin, total award \$1,444,000, 2019-2022
4. IBM Einstein Fellowship, Institute for Advanced Study, Princeton, total award 1/2 of my academic salary, 2017-2018
5. Department of Energy Grant DE-SC0010010 (Task A) *Program in Theoretical High Energy Physics*, Co-PI with J. Fan, A. Jevicki, D. Lowe, M. Spradlin, total award \$1,380,000, 2016-2019
6. Early Career Research Award, Department of Energy, total award \$750,000, 2011-2016
7. Sloan Research Fellowship, Alfred P. Sloan Foundation, total award \$50,000, 2011-2015
8. Simons Fellowship in Theoretical Physics, total award \$107,660, 2012-2013
9. Career Development Award, NSF ADVANCE Program, Brown University, total award \$15,000, 2009-2011
10. National Science Foundation CAREER Award PHY-0643150 *QCD and String Theory*, sole PI, total award \$399,995, 2007-2012
11. Department of Energy Grant DOE DE-FG02-91ER40688 *Research in Theoretical Physics*, Co-PI with A. Jevicki, D. Lowe and C. Tan, 2007-2008: \$328,000, 2008-2009: \$318,500, 2009-2010: \$340,000, 2010-2011: \$340,000
12. National Science Foundation PHY-0714747 *Northeast Regional String Theory Conference Program*, co-PI with D. Lowe and M. Spradlin, total award \$5,000, 2007-2009

## PUBLICATIONS

*Google Scholar: ~7,500 citations, h-index=49*

♣ = 500+ (2) ♠ = 250+ (2) ♠ = 100+ (13) ● = 50+ citations (29)

*In theoretical high energy physics community the author list is alphabetical*

1. S. De, D. Pavlov, M. Spradlin and A. Volovich, “From Feynman diagrams to the amplituhedron: a gentle review,” [arXiv:2410.11757 [hep-th]].
2. R. Bhardwaj, M. Spradlin, A. Volovich and H. C. Weng, “Unitarity of bespoke amplitudes,” *Phys. Rev. D* **110**, no.10, 106016 (2024) [arXiv:2406.04410 [hep-th]].
3. S. De, A. Pokraka, M. Skowronek, M. Spradlin and A. Volovich, “Surfaceology for Colored Yukawa Theory,” *JHEP* **09**, 160 (2024) [arXiv:2406.04411 [hep-th]].

4. A. Pokraka, S. Rajan, L. Ren, A. Volovich and W. W. Zhao, “Five-dimensional spinor helicity for all masses and spins,” [arXiv:2405.09533 [hep-th]].
5. A. Ball, M. Spradlin, A. Yelleshpur Srikant and A. Volovich, “Supersymmetry and the Celestial Jacobi Identity,” JHEP **04**, 099 (2024) [arXiv:2311.01364 [hep-th]].
6. A. Ball, S. De, A. Yelleshpur Srikant and A. Volovich, “Scalar-Graviton Amplitudes and Celestial Holography,” JHEP **02** (2024), 097 [arXiv:2310.00520 [hep-th]].
7. A. Ball, A. Bencke, Y. Chen and A. Volovich, “Hidden symmetry in the double copy,” JHEP **10**, 085 (2023) [arXiv:2307.01338 [hep-th]].
8. L. Ren, M. Spradlin, C. Vergu and A. Volovich, “One-loop Integrals from Volumes of Orthoschemes,” JHEP **05**, 104 (2024) [arXiv:2306.04630 [hep-th]].
9. L. Lippstreu, M. Spradlin, A. Yelleshpur Srikant and A. Volovich, “Landau Singularities of the 7-Point Ziggurat II,” JHEP **01** (2024), 069 [arXiv:2305.17069 [hep-th]].
10. R. Bhardwaj, S. De, M. Spradlin and A. Volovich, “On unitarity of the Coon amplitude,” JHEP **08**, 082 (2023) [arXiv:2212.00764 [hep-th]].
11. L. Lippstreu, M. Spradlin and A. Volovich, “Landau Singularities of the 7-Point Ziggurat I,” JHEP **07**, 024 (2024) [arXiv:2211.16425 [hep-th]].
12. R. Bhardwaj, L. Lippstreu, L. Ren, M. Spradlin, A. Yelleshpur Srikant and A. Volovich, “Loop-level gluon OPEs in celestial holography,” JHEP **11**, 171 (2022) [arXiv:2208.14416 [hep-th]].
13. N. Arkani-Hamed, L. J. Dixon, A. J. McLeod, M. Spradlin, J. Trnka and A. Volovich, “Solving Scattering in  $N = 4$  Super-Yang-Mills Theory,” [arXiv:2207.10636 [hep-th]].
14. S. De, Y. Hu, A. Yelleshpur Srikant and A. Volovich, “Correlators of four light-ray operators in CCFT,” JHEP **10**, 170 (2022) [arXiv:2206.08875 [hep-th]].
15. L. Ren, M. Spradlin, A. Yelleshpur Srikant and A. Volovich, “On effective field theories with celestial duals,” JHEP **08**, 251 (2022) [arXiv:2206.08322 [hep-th]].
16. • J. L. Bourjaily, J. Broedel, E. Chaubey, C. Duhr, H. Frellesvig, M. Hidding, R. Marzucca, A. J. McLeod, M. Spradlin and L. Tancredi, *et al.* “Functions Beyond Multiple Polylogarithms for Precision Collider Physics,” [arXiv:2203.07088 [hep-ph]].
17. Y. Hu, L. Lippstreu, M. Spradlin, A. Y. Srikant and A. Volovich, “Four-point correlators of light-ray operators in CCFT,” JHEP **07**, 104 (2022) [arXiv:2203.04255 [hep-th]].
18. • J. Mago, L. Ren, A. Y. Srikant and A. Volovich, “Deformed  $w_{1+\infty}$  Algebras in the Celestial CFT,” SIGMA **19**, 044 (2023) [arXiv:2111.11356 [hep-th]].
19. S. J. Gates, S. N. H. Mak, M. Spradlin and A. Volovich, “Cluster Superalgebras and Stringy Integrals,” [arXiv:2111.08186 [hep-th]].

20. Y. Hu, L. Ren, A. Y. Srikant and A. Volovich, “Celestial dual superconformal symmetry, MHV amplitudes and differential equations,” JHEP **12** (2021), 171 [arXiv:2106.16111 [hep-th]].
21. J. Mago, A. Schreiber, M. Spradlin, A. Yelleshpur Srikant and A. Volovich, “Symbol alphabets from plabic graphs III:  $n = 9$ ,” JHEP **09** (2021), 002 [arXiv:2106.01406 [hep-th]].
22. L. Ren, M. Spradlin and A. Volovich, “Symbol alphabets from tensor diagrams,” JHEP **12** (2021), 079 [arXiv:2106.01405 [hep-th]].
23. J. Mago, A. Schreiber, M. Spradlin, A. Y. Srikant and A. Volovich, “Symbol alphabets from plabic graphs II: rational letters,” JHEP **04** (2021), 056 [arXiv:2012.15812 [hep-th]].
24. J. Mago, A. Schreiber, M. Spradlin and A. Volovich, “Symbol alphabets from plabic graphs,” JHEP **10** (2020), 128 [arXiv:2007.00646 [hep-th]].
25. J. Mago, A. Schreiber, M. Spradlin and A. Volovich, “A note on one-loop cluster adjacency in  $\mathcal{N} = 4$  SYM,” JHEP **01** (2021), 084 [arXiv:2005.07177 [hep-th]].
26. T. Lukowski, M. Parisi, M. Spradlin and A. Volovich, “Cluster Adjacency for  $m = 2$  Yangian Invariants,” JHEP **10** (2019), 158 [arXiv:1908.07618 [hep-th]].
27. L. Lippstreu, J. Mago, M. Spradlin and A. Volovich, “Weak Separation, Positivity and Extremal Yangian Invariants,” JHEP **09** (2019), 093 [arXiv:1906.11034 [hep-th]].
28. J. Mago, A. Schreiber, M. Spradlin and A. Volovich, “Yangian invariants and cluster adjacency in  $\mathcal{N} = 4$  Yang-Mills,” JHEP **10** (2019), 099 [arXiv:1906.10682 [hep-th]].
29. ♠ D. Nandan, A. Schreiber, A. Volovich and M. Zlotnikov, “Celestial Amplitudes: Conformal Partial Waves and Soft Limits,” JHEP **10** (2019), 018 [arXiv:1904.10940 [hep-th]].
30. J. Golden, A. J. McLeod, M. Spradlin and A. Volovich, “The Sklyanin Bracket and Cluster Adjacency at All Multiplicity,” JHEP **03** (2019), 195 [arXiv:1902.11286 [hep-th]].
31. I. Prlina, M. Spradlin, J. Stankowicz, S. Stanojevic and A. Volovich, “All-Helicity Symbol Alphabets from Unwound Amplituhedra,” JHEP **05** (2018), 159 [arXiv:1711.11507 [hep-th]].
32. ● A. Schreiber, A. Volovich and M. Zlotnikov, “Tree-level gluon amplitudes on the celestial sphere,” Phys. Lett. B **781** (2018), 349-357 [arXiv:1711.08435 [hep-th]].
33. ● C. Peng, M. Spradlin and A. Volovich, “Correlators in the  $\mathcal{N} = 2$  Supersymmetric SYK Model,” JHEP **10** (2017), 202 [arXiv:1706.06078 [hep-th]].
34. ♠ C. Peng, M. Spradlin and A. Volovich, “A Supersymmetric SYK-like Tensor Model,” JHEP **05** (2017), 062 [arXiv:1612.03851 [hep-th]].

35. • T. Dennen, I. Prlina, M. Spradlin, S. Stanojevic and A. Volovich, “Landau Singularities from the Amplituhedron,” *JHEP* **06** (2017), 152 [arXiv:1612.02708 [hep-th]].
36. T. Dennen, M. Spradlin and A. Volovich, “Landau Singularities and Symbology: One- and Two-loop MHV Amplitudes in SYM Theory,” *JHEP* **03** (2016), 069 [arXiv:1512.07909 [hep-th]].
37. D. Parker, A. Scherlis, M. Spradlin and A. Volovich, “Hedgehog bases for  $A_n$  cluster polylogarithms and an application to six-point amplitudes,” *JHEP* **11** (2015), 136 [arXiv:1507.01950 [hep-th]].
38. • A. Volovich, C. Wen and M. Zlotnikov, “Double Soft Theorems in Gauge and String Theories,” *JHEP* **07** (2015), 095 [arXiv:1504.05559 [hep-th]].
39. ♠ B. U. W. Schwab and A. Volovich, “Subleading Soft Theorem in Arbitrary Dimensions from Scattering Equations,” *Phys. Rev. Lett.* **113** (2014) no.10, 101601 [arXiv:1404.7749 [hep-th]].
40. • J. Golden, M. F. Paulos, M. Spradlin and A. Volovich, “Cluster Polylogarithms for Scattering Amplitudes,” *J. Phys. A* **47** (2014) no.47, 474005 [arXiv:1401.6446 [hep-th]].
41. ♠ J. Golden, A. B. Goncharov, M. Spradlin, C. Vergu and A. Volovich, “Motivic Amplitudes and Cluster Coordinates,” *JHEP* **01** (2014), 091 [arXiv:1305.1617 [hep-th]].
42. • D. Nandan, M. F. Paulos, M. Spradlin and A. Volovich, “Star Integrals, Convolutions and Simplices,” *JHEP* **05** (2013), 105 [arXiv:1301.2500 [hep-th]].
43. • M. F. Paulos, M. Spradlin and A. Volovich, “Mellin Amplitudes for Dual Conformal Integrals,” *JHEP* **08** (2012), 072 [arXiv:1203.6362 [hep-th]].
44. A. Prygarin, M. Spradlin, C. Vergu and A. Volovich, “All Two-Loop MHV Amplitudes in Multi-Regge Kinematics From Applied Symbology,” *Phys. Rev. D* **85** (2012), 085019 [arXiv:1112.6365 [hep-th]].
45. D. Nandan, A. Volovich and C. Wen, “On Feynman Rules for Mellin Amplitudes in AdS/CFT,” *JHEP* **05** (2012), 129 [arXiv:1112.0305 [hep-th]].
46. • J. L. Bourjaily, A. DiRe, A. Shaikh, M. Spradlin and A. Volovich, “The Soft-Collinear Bootstrap: N=4 Yang-Mills Amplitudes at Six and Seven Loops,” *JHEP* **03** (2012), 032 [arXiv:1112.6432 [hep-th]].
47. M. Spradlin and A. Volovich, “Symbols of One-Loop Integrals From Mixed Tate Motives,” *JHEP* **11** (2011), 084 [arXiv:1105.2024 [hep-th]].
48. ✠ A. B. Goncharov, M. Spradlin, C. Vergu and A. Volovich, “Classical Polylogarithms for Amplitudes and Wilson Loops,” *Phys. Rev. Lett.* **105** (2010), 151605 [arXiv:1006.5703 [hep-th]].

49. • J. L. Bourjaily, J. Trnka, A. Volovich and C. Wen, “The Grassmannian and the Twistor String: Connecting All Trees in N=4 SYM,” JHEP **01** (2011), 038 [arXiv:1006.1899 [hep-th]].
50. D. Nandan, A. Volovich and C. Wen, “A Grassmannian Etude in NMHV Minors,” JHEP **07** (2010), 061 [arXiv:0912.3705 [hep-th]].
51. • M. Spradlin and A. Volovich, “From Twistor String Theory To Recursion Relations,” Phys. Rev. D **80** (2009), 085022 [arXiv:0909.0229 [hep-th]].
52. • D. Nguyen, M. Spradlin, A. Volovich and C. Wen, “The Tree Formula for MHV Graviton Amplitudes,” JHEP **07** (2010), 045 [arXiv:0907.2276 [hep-th]].
53. C. Kalousios, C. Vergu and A. Volovich, “Factorized Tree-level Scattering in  $AdS_4 \times CP^3$ ,” JHEP **09** (2009), 049 [arXiv:0905.4702 [hep-th]].
54. • A. Volovich and C. Wen, “Correlation Functions in Non-Relativistic Holography,” JHEP **05** (2009), 087 [arXiv:0903.2455 [hep-th]].
55. C. Kalousios, M. Spradlin and A. Volovich, “Dyonic Giant Magnons on  $CP^3$ ,” JHEP **07** (2009), 006 [arXiv:0902.3179 [hep-th]].
56. • J. M. Drummond, M. Spradlin, A. Volovich and C. Wen, “Tree-Level Amplitudes in N=8 Supergravity,” Phys. Rev. D **79** (2009), 105018 [arXiv:0901.2363 [hep-th]].
57. M. Spradlin, A. Volovich and C. Wen, “Three Applications of a Bonus Relation for Gravity Amplitudes,” Phys. Lett. B **674** (2009), 69-72 [arXiv:0812.4767 [hep-th]].
58. • M. Spradlin, A. Volovich and C. Wen, “Three-Loop Leading Singularities and BDS Ansatz for Five Particles,” Phys. Rev. D **78** (2008), 085025 [arXiv:0808.1054 [hep-th]].
59. C. Kalousios, G. Papathanasiou and A. Volovich, “Exact solutions for N-magnon scattering,” JHEP **08** (2008), 095 [arXiv:0806.2466 [hep-th]].
60. • F. Cachazo, M. Spradlin and A. Volovich, “Leading Singularities of the Two-Loop Six-Particle MHV Amplitude,” Phys. Rev. D **78** (2008), 105022 [arXiv:0805.4832 [hep-th]].
61. ♣ Z. Bern, L. J. Dixon, D. A. Kosower, R. Roiban, M. Spradlin, C. Vergu and A. Volovich, “The Two-Loop Six-Gluon MHV Amplitude in Maximally Supersymmetric Yang-Mills Theory,” Phys. Rev. D **78** (2008), 045007 [arXiv:0803.1465 [hep-th]].
62. A. Volovich, “Multiloop gluon amplitudes and AdS/CFT,” Contribution to: Quarks 2008.
63. ♠ A. Jevicki, K. Jin, C. Kalousios and A. Volovich, “Generating AdS String Solutions,” JHEP **03** (2008), 032 [arXiv:0712.1193 [hep-th]].

64. R. Ishizeki, M. Kruczenski, M. Spradlin and A. Volovich, “Scattering of single spikes,” JHEP **02** (2008), 009 [arXiv:0710.2300 [hep-th]].
65. D. Nguyen, M. Spradlin and A. Volovich, “New Dual Conformally Invariant Off-Shell Integrals,” Phys. Rev. D **77** (2008), 025018 [arXiv:0709.4665 [hep-th]].
66. A. Jevicki, C. Kalousios, M. Spradlin and A. Volovich, “Dressing the Giant Gluon,” JHEP **12** (2007), 047 [arXiv:0708.0818 [hep-th]].
67. • F. Cachazo, M. Spradlin and A. Volovich, “Four-Loop Collinear Anomalous Dimension in  $N = 4$  Yang-Mills Theory,” Phys. Rev. D **76** (2007), 106004 [arXiv:0707.1903 [hep-th]].
68. A. Volovich, “Yang-Mills Amplitude and Twistor Sting Theory,” eConf **C0706044** (2007), 03 PARIS-2007-03.
69. ♠ F. Cachazo, M. Spradlin and A. Volovich, “Four-loop cusp anomalous dimension from obstructions,” Phys. Rev. D **75** (2007), 105011 [arXiv:hep-th/0612309 [hep-th]].
70. • C. Kalousios, M. Spradlin and A. Volovich, “Dressing the giant magnon II,” JHEP **03** (2007), 020 [arXiv:hep-th/0611033 [hep-th]].
71. ♠ M. Spradlin and A. Volovich, “Dressing the Giant Magnon,” JHEP **10** (2006), 012 [arXiv:hep-th/0607009 [hep-th]].
72. • F. Cachazo, M. Spradlin and A. Volovich, “Iterative structure within the five-particle two-loop amplitude,” Phys. Rev. D **74** (2006), 045020 [arXiv:hep-th/0602228 [hep-th]].
73. F. Cachazo, M. Spradlin and A. Volovich, “Hidden beauty in multiloop amplitudes,” JHEP **07** (2006), 007 [arXiv:hep-th/0601031 [hep-th]].
74. M. Spradlin, T. Takayanagi and A. Volovich, “String theory in beta deformed space-times,” JHEP **11** (2005), 039 [arXiv:hep-th/0509036 [hep-th]].
75. • R. Britto, B. Feng, R. Roiban, M. Spradlin and A. Volovich, “All split helicity tree-level gluon amplitudes,” Phys. Rev. D **71** (2005), 105017 [arXiv:hep-th/0503198 [hep-th]].
76. • R. Roiban, M. Spradlin and A. Volovich, “Dissolving  $N=4$  loop amplitudes into QCD tree amplitudes,” Phys. Rev. Lett. **94** (2005), 102002 [arXiv:hep-th/0412265 [hep-th]].
77. M. Spradlin, M. Van Raamsdonk and A. Volovich, “Two-loop partition function in the planar plane-wave matrix model,” Phys. Lett. B **603** (2004), 239-248 [arXiv:hep-th/0409178 [hep-th]].
78. • M. Spradlin and A. Volovich, “A Pendant for Polya: The One-loop partition function of  $N=4$  SYM on  $R \times S^3$ ,” Nucl. Phys. B **711** (2005), 199-230 [arXiv:hep-th/0408178 [hep-th]].



79. • R. Roiban and A. Volovich, “Yang-Mills correlation functions from integrable spin chains,” *JHEP* **09** (2004), 032 [arXiv:hep-th/0407140 [hep-th]].
80. R. Roiban, M. Spradlin and A. Volovich, “Yang-Mills amplitudes from twistor string theory,” Contribution to: AMS - IMS - SIAM Summer Research Conference on String Geometry, 81-92 (2004).
81. ♣ R. Roiban, M. Spradlin and A. Volovich, “On the tree level S matrix of Yang-Mills theory,” *Phys. Rev. D* **70** (2004), 026009 [arXiv:hep-th/0403190 [hep-th]].
82. ♠ R. Roiban, M. Spradlin and A. Volovich, “A Googly amplitude from the B model in twistor space,” *JHEP* **04** (2004), 012 [arXiv:hep-th/0402016 [hep-th]].
83. • R. Roiban and A. Volovich, “All conjugate-maximal-helicity-violating amplitudes from topological open string theory in twistor space,” *Phys. Rev. Lett.* **93** (2004), 131602 [arXiv:hep-th/0402121 [hep-th]].
84. M. Spradlin and A. Volovich, “Light cone string field theory in a plane wave,” [arXiv:hep-th/0310033 [hep-th]].
85. O. DeWolfe, R. Roiban, M. Spradlin, A. Volovich and J. Walcher, “On the S matrix of type 0 string theory,” *JHEP* **11** (2003), 012 [arXiv:hep-th/0309148 [hep-th]].
86. M. Spradlin and A. Volovich, “Note on plane wave quantum mechanics,” *Phys. Lett. B* **565** (2003), 253-265 [arXiv:hep-th/0303220 [hep-th]].
87. R. Roiban, M. Spradlin and A. Volovich, “On light cone SFT contact terms in a plane wave,” *JHEP* **10** (2003), 055 [arXiv:hep-th/0211220 [hep-th]].
88. • Y. H. He, J. H. Schwarz, M. Spradlin and A. Volovich, “Explicit formulas for Neumann coefficients in the plane wave geometry,” *Phys. Rev. D* **67** (2003), 086005 [arXiv:hep-th/0211198 [hep-th]].
89. • J. Pearson, M. Spradlin, D. Vaman, H. L. Verlinde and A. Volovich, “Tracing the string: BMN correspondence at finite  $J^2/N$ ,” *JHEP* **05** (2003), 022 [arXiv:hep-th/0210102 [hep-th]].
90. ♠ M. Spradlin and A. Volovich, “Superstring interactions in a pp wave background. 2,” *JHEP* **01** (2003), 036 [arXiv:hep-th/0206073 [hep-th]].
91. • I. R. Klebanov, M. Spradlin and A. Volovich, “New effects in gauge theory from pp wave superstrings,” *Phys. Lett. B* **548** (2002), 111-118 [arXiv:hep-th/0206221 [hep-th]].
92. ♠ M. Spradlin and A. Volovich, “Superstring interactions in a p p wave background,” *Phys. Rev. D* **66** (2002), 086004 [arXiv:hep-th/0204146 [hep-th]].
93. A. Volovich, “Holography for coset spaces and noncommutative solitons,” UMI-30-51317 (2002).

94. ♠ M. Spradlin and A. Volovich, “Vacuum states and the S matrix in dS / CFT,” *Phys. Rev. D* **65** (2002), 104037 [arXiv:hep-th/0112223 [hep-th]].
95. ✠ M. Spradlin, A. Strominger and A. Volovich, “Les Houches lectures on de Sitter space,” [arXiv:hep-th/0110007 [hep-th]].
96. M. Spradlin and A. Volovich, “Noncommutative solitons on Kahler manifolds,” *JHEP* **03** (2002), 011 [arXiv:hep-th/0106180 [hep-th]].
97. A. Volovich, “Discreteness in deSitter space and quantization of Kahler manifolds,” [arXiv:hep-th/0101176 [hep-th]].
98. R. Britto-Pacumio, J. Michelson, A. Strominger and A. Volovich, “Lectures on Superconformal Quantum Mechanics and Multi-Black Hole Moduli Spaces,” *NATO Sci. Ser. C* **564** (2001), 235-264.
99. R. Britto-Pacumio, A. Strominger and A. Volovich, “Two black hole bound states,” *JHEP* **03** (2001), 050 [arXiv:hep-th/0004017 [hep-th]].
100. ♠ R. Britto-Pacumio, J. Michelson, A. Strominger and A. Volovich, “Lectures on Superconformal Quantum Mechanics and Multi-Black Hole Moduli Spaces,” *NATO Sci. Ser. C* **556** (2000), 255-284 [arXiv:hep-th/9911066 [hep-th]].
101. R. Britto-Pacumio, A. Strominger and A. Volovich, “Holography for coset spaces,” *JHEP* **11** (1999), 013 [arXiv:hep-th/9905211 [hep-th]].
102. A. Volovich, “Holography for coset spaces,” *NATO Sci. Ser. C* **564** (2001), 405-408.
103. ● A. Volovich, “Rarita-Schwinger field in the AdS / CFT correspondence,” *JHEP* **09** (1998), 022 [arXiv:hep-th/9809009 [hep-th]].
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107. A. Volovich, “On domain wall in MQCD,” *NATO Sci. Ser. C* **520** (1999), 471-474.
108. A. Volovich, “Three block p-branes in various dimensions,” *Nucl. Phys. B* **492** (1997), 235-248 [arXiv:hep-th/9608095 [hep-th]].

## INVITED TALKS

1. AdS/CFT Meets Carrollian and Celestial Holography Workshop, Edinburgh, 09/25

2. SUSY 2025, UC Santa Cruz, 08/25
3. Tropical Geometry, Twistor Spaces and Cluster Geometry, MCA Session, University of Miami, 07/25
4. Amplitudes 2025, Seoul National University, 06/25
5. The Amplituhedron: Structure, Combinatorics, and Positive Geometry, SwissMAP Research Station, 06/25
6. Total Positivity and Quantum Field Theory School, CMSA, Harvard, 06/25
7. HET Seminar, Caltech, 03/25
8. Positive Geometry in Scattering Amplitudes and Cosmological Correlators, ICTS, Bengaluru, 02/25 (d)
9. Quantum Gravity Seminar, Harvard, 1/25 (d)
10. Strings 2025 (closing panel), 01/25
11. HET Seminar, National Taiwan University, 12/24 (d)
12. CMSA Colloquium, Harvard, 11/24
13. Combinatorics of Fundamental Physics Workshop, IAS, Princeton, 11/24
14. Twistors in Geometry and Physics Workshop, Newton Institute, UK, 09/24
15. The Mathematics Behind Scattering Amplitudes, GGI, Italy, 08/24 (d)
16. Elliptics and Beyond'24 (discussion), MIAPbP, Germany, 08/24 (d)
17. Amplituhedra and Positive Geometry Workshop, CMSA, Harvard, 05/24
18. Simons Satellite Meeting on Celestial Holography, New York, 04/24 (d)
19. HET Seminar, University of Michigan, 04/24
20. What is String Theory Program, KITP, 03/24 (d)
21. Workshop on Celestial Holography and Asymptotic Symmetries, Chile, 03/24 (d)
22. QCD Meets Gravity 2023, CERN, 12/23
23. HET Seminar, Boston University, 11/23
24. Celestial Zoom Seminar, 11/23 (d)
25. Celestial Kickoff Workshop, Harvard, 10/23 (d)
26. Combinatorics Seminar, MIT/Harvard, 9/23 (p)

27. Jefferson Theory Seminar, Harvard, 9/23 (d)
28. Colloquium, Harvard, 9/23
29. Amplitudes 2023, CERN, 08/23
30. Amplifying Gravity at All Scales, NORDITA, Stockholm, 07/23
31. Prague Spring Amplitudes Workshop, Prague, 05/23
32. IAS Group Meeting, Princeton, 03/23 (d)
33. Workshop Lie Theory and Its Applications in Physics, Varna, 09/23 (d)
34. Hidden Mathematical Structures of the Amplituhedron Workshop, Dublin, 04/23 (d)
35. HET Seminar, Northeastern, 03/23
36. HET Seminar, Caltech, 01/23 (p)
37. QCD Meets Gravity 2022, Zurich, 12/22
38. NeXus group, virtual, 10/22
39. Jumpstarting Elliptic Bootstrap Methods for Scattering Amplitudes Workshop, NBI, 09/22 (d)
40. Corfu Workshop: Celestial Amplitudes and Flat Space Holography, Corfu, 09/22 (d)
41. Amplitudes 2022, Prague, 08/22 (d)
42. Novel Developments in Scattering Amplitudes program, MIAPP, Munich, 06/22 (d)
43. Joint BHI/CMSA Conference on Flat Holography, Harvard, 06/22
44. Celestial Holography 2022, Princeton, 02/22 (d)
45. CMSA Combinatorics, Physics and Probability Seminar, Harvard, 05/22 (p)
46. Mini-Workshop: Scattering Amplitudes, Cluster Algebras, and Positive Geometries, Oberwolfach, Germany, 12/21 (d)
47. Workshop on Interdisciplinary applications of cluster algebras, Isaac Newton Institute, Cambridge, UK, virtual, 11/21
48. Mathematical Physics Colloquium, Hamburg, Germany, virtual, 10/21
49. International Conference on Strings, Branes and Holograms, Ascona, Switzerland, virtual, 10/21
50. Workshop on Celestial Sphere: holography, CFT and amplitudes, Higgs Centre for Theoretical Physics at the University of Edinburgh, UK, 09/21 (d)

51. Workshop on Twistor Theory and Beyond, Cambridge, UK, virtual, 09/21
52. Workshop Celestial Amplitudes and Flat Space Holography, Corfu Summer Institute, Greece, 09/21 (d)
53. SUSY 2021, Shanghai, virtual, 08/21
54. Amplitudes 2021, NBI, virtual, 08/21
55. XII International Symposium Quantum Theory and Symmetries, Moscow, Russia, 08/21 (p)
56. Nankai Symposium on Mathematical Dialogues, virtual, 08/21
57. Strings 2021, Brasil, virtual, 06/21
58. Workshop on Positive geometries for scattering amplitudes and beyond, MITP, Mainz, virtual, 06/21
59. DIAS Seminar, Dublin, virtual, 05/21
60. QCD Meets Gravity, Northwestern, 12/20 (d)
61. Cluster Algebra 2020, virtual, 08/20
62. Workshop on Amplitudes, Inflation and the Bootstrap, Capri, Italy, 08/20 (c)
63. Novel Developments in Scattering Amplitudes Program, MIAPP, Germany, 07/20 (c)
64. Recent Developments in S-matrix Theory, ICTP program, Bangalore, 06/20 (d)
65. Quarks-2020, Russia, 06/20 (c)
66. IHP Workshop Holography, tensor models and related topics, IHP, Paris, 06/20 (c)
67. Amplitudes Summer School, U of Michigan, 05/20 (c)
68. Workshop on Cluster Algebras and the Geometry of Scattering Amplitudes, Higgs Centre for Theoretical Physics at the University of Edinburgh, UK, 03/20 (d)
69. Rutgers University, seminar, 02/20 (d)
70. Miami-2019, 12/19 (d)
71. Harvard University, CMSA Seminar, 11/19 (d)
72. Amplitudes 2019, Dublin, 07/19
73. Quantum and Gravity in Okinawa Conference, Okinawa, 07/19 (d)
74. Simons Symposium on Amplitudes meet Cosmology, Germany, 05/19 (d)
75. Columbia University, Seminar, 04/19

76. Utah Strings and Black Holes Workshop, Utah, 04/19 (d)
77. Women at the Intersection of Mathematics and Physics Conference, U Geneva, 02/19
78. BASIC 2019 Workshop on Theoretical and Mathematical Physics, 02/19 (d)
79. UK Annual Theory Meeting, UK, 12/18
80. GGI Workshop on Amplitudes in the LHC era, Florence, Italy, 10/18
81. Symposium on Holographic Tensors, Okinawa, Japan, 10/18 (d)
82. Niels Bohr Institute, Seminar, 08/18
83. Symmetries of S-matrix and Infrared Physics Workshop, Edinburgh, 07/18
84. Quarks-2018, Russia, 05/18 (d)
85. Holographic Quantum Matter Workshop, Minnesota, 05/18 (d)
86. Program on Poisson geometry of moduli spaces, associators and quantum field theory, Simons Center, 05/18
87. Cluster Algebra and Mathematical Physics Conference, Michigan, 05/18
88. Women at the intersection of mathematics and theoretical physics Workshop, Hamburg, 04/18 (d)
89. New York University, Seminar, 03/18
90. Periods in Number Theory, Algebraic Geometry and Physics program, Bonn, Germany, 01/18 (d)
91. City College Colloquium, New York, 12/17
92. Miami-2017, Florida, 12/17 (d)
93. 20 Years Later: The Many Faces of AdS/CFT Conference, Princeton, 11/17 (d)
94. Amplitudes 2017, UK, 07/17
95. Supersymmetries and Quantum Symmetries Workshop, Dubna, Russia, 07/17 (d)
96. Loopfest XVI, Argonne, 05/17
97. KITP program Scattering Amplitudes and Beyond, 04/17 (d)
98. Third workshop on String Theory and Gender, Southampton, UK, 03/17
99. String Theory and Scattering Amplitudes Workshop, Simons Center, 01/17
100. New Horizons in Twistor theory, Oxford, UK, 01/17

101. School and Workshop on Amplitudes in Beijing 2016, Beijing, 10/16 (d)
102. New formulations for scattering amplitudes workshop, Munich, 09/16 (d)
103. Workshop on Current Themes in High Energy Physics and Cosmology, Niels Bohr Institute, Copenhagen, 08/16
104. Nordita program on Aspects of Scattering Amplitudes, Stockholm, 06/16
105. Isaac Newton Institute for Mathematical Sciences program on Gravity, Twistors and Amplitudes, Cambridge, UK, 06/16
106. Flat Holography workshop, Simons Center, 04/16
107. MHV @ 30 Workshop, Fermilab, 03/16
108. Hidden symmetries and integrability methods in Super-Yang-Mills theories and their string duals workshop, Montreal, 08/15
109. Lectures at the International Summer School on Theoretical Problems of Physics of Fundamental Interactions, Zelenogorsk, Russia, 07/15
110. Amplitudes, Motives and Beyond workshop, Mainz, 06/15
111. Miami 2014, Miami, 12/14
112. Grassmannian Geometry of Scattering Amplitudes workshop, Caltech, 11/14
113. New geometric structures in scattering amplitudes workshop, Oxford, Sep. 14
114. CERN, 08/2014
115. Integrable Structures in Scattering Amplitudes workshop, Durham, 04/14
116. Yale University, 04/14
117. Brandeis University, 10/13
118. Queen Mary College, London, 06/13
119. Humboldt University, Berlin, 05/13
120. Niels Bohr Institute, Copenhagen, 05/13
121. Zurich Theoretical Physics Colloquium, 04/13
122. Amplitudes 2013, Tegernsee, Germany, 04/13
123. CERN Theory Colloquium, 11/12
124. String-Math 2012, Bonn, Germany, 07/12
125. Conference " $\mathcal{N} = 4$  Super Yang-Mills Theory, 35 Years After", Caltech, 04/12

126. Isaac Newton Institute Workshop on Scattering Amplitudes, Cambridge, UK, 04/12
127. Northeast Conference for Undergraduate Women in Physics, Yale, 01/12
128. Miami 2011, Florida, 12/11
129. Amplitudes 2011, Michigan, 11/11
130. INT workshop "Frontiers of QCD," Seattle, 09/11
131. Harvard University, 09/11
132. Strings 2011, Uppsala, Sweden, 06/11
133. KITP, Santa Barbara, 05/11
134. Miami 2010, Florida, 12/10
135. 40th International Symposium Ahrenshoop on the Theory of Elementary Particles, Berlin, 08/10
136. Amplitudes 2010, London, 05/10
137. Miami 2009, Florida, 12/09
138. Miami 2008, Florida, 12/08
139. "Gauge Theory and String Theory" workshop, Zurich, 07/08
140. "Quarks-2008" international workshop on high energy physics, Moscow, 05/08
141. GEOMAP lectures by a distinguished foreign scientist in Niels Bohr Institute, University of Copenhagen, 04/08
142. New York University, 03/08
143. Miami 2007, Florida, 12/07
144. Brandeis University, 10/07
145. London Mathematical Society Symposium "Twistors, Strings and Amplitudes", Durham, 08/07
146. New England Particle Physics Student Retreat, Cape Cod, 08/07
147. Workshop "Twistors, Perturbative Gauge Theories and Superstrings," Munich, 06/07
148. Ninth Workshop on Non-Perturbative Quantum Chromodynamics, Paris, 06/07
149. Harvard University, 01/07
150. Conference "Is N=8 Supergravity Finite?" UCLA, 12/06



151. Conference “Twistors, Strings and Gauge Theory,” Perimeter Institute, 09/06
152. Institute for Advanced Study, 03/06;
153. Brown University, 02/06
154. QMUL Workshop “From Twistors to Amplitudes”, London, 11/05
155. Rutgers University, 11/05
156. MIT, 10/05
157. International Spring School on String Theory, Hangzhou, China, 05/05
158. University of California, Davis, 03/05 (math)
159. University of California, Davis, 04/05 (physics)
160. Cornell University, colloquium, 03/05
161. University of Texas, Austin, colloquium, 03/05
162. University of Maryland, 03/05
163. Stony Brook University, 03/05
164. University of California, San Diego, 02/05
165. University of California, Irvine, 02/05
166. McGill University, colloquium, 01/05
167. Cornell University, 01/05
168. University of Illinois, Urbana-Champaign, 01/05
169. DESY, Germany, 01/05
170. Saclay, France, 01/05
171. University of Amsterdam, 01/05
172. University of Rochester, colloquium, 12/04
173. University of Michigan, 12/04
174. Stony Brook University, 12/04
175. University of Washington, 11/04
176. Ohio State University, colloquium, 11/04
177. KITP conference and program ”QCD and String Theory”, Santa Barbara, 11/04

178. University of Chicago, 10/04
179. University of Rochester, 10/04
180. Perimeter Institute, Canada, 10/04
181. University of Illinois, Urbana-Champaign, 09/04
182. University of Michigan, 09/04
183. Kavli Institute for Theoretical Physics, Santa Barbara, 09/04
184. String Field Theory Camp, Banff International Research Station, Canada, 07/04
185. Modern Trends in String Theory, Portugal, 06/04
186. Harvard University, 04/04
187. University of British Columbia, Vancouver, Canada, 04/04
188. Ohio State University, 04/04
189. Kavli Institute for Theoretical Physics, Santa Barbara, 03/04
190. University of California, San Diego, 11/03
191. Strings 2003, Kyoto, 07/03
192. University of North Carolina/Duke University, 02/03
193. University of Texas, 02/03
194. Princeton University, 11/02
195. University of Southern California, 10/02
196. Kavli Institute for Theoretical Physics, Santa Barbara, 09/02
197. Aspen Center for Physics, 08/02
198. Cargese Summer School “Progress in String Theory and M-theory,” 06/02
199. Harvard University, 05/02
200. University of Pennsylvania, 12/01
201. Princeton University, 12/01
202. Harvard University, 09/01
203. Stanford University, 11/01
204. Kavli Institute for Theoretical Physics, Santa Barbara, 11/01

205. California Institute of Technology, 11/01
206. University of Chicago, 10/01
207. Les Houches Summer School, 08/01
208. LPTHE, University Paris 6, Paris, 07/01;
209. Brown University, 02/01
210. University of British Columbia, Vancouver, Canada; 04/00
211. Simon Fraser University, Vancouver, Canada, 04/00;
212. Harvard University, 03/00
213. NATO ASI "Quantum Geometry", Akureyri, Iceland, 08/99
214. LPTHE, University Paris 6, Paris, 07/99
215. Harvard University, 05/99
216. Ecole Normale Supérieure–Jussieu, Paris; 01/98
217. Ecole–Polytechnique, Paris; 01/98
218. LPTHE, University Paris 6, Paris; 12/98
219. L. D. Landau Institute for Theoretical Physics, 01/98, 03/98, 01/99, 09/99
220. Moscow State University, Physics Department, 03/97, 04/98, 01/99
221. Student Conferences in Joint Institute of Nuclear Research, Dubna, 03/97, 03/98
222. Steklov Mathematical Institute, Moscow, 01/97

## **SERVICE**

### *Profession*

1. Editor-in-Chief: Letters in Mathematical Physics, Springer, 2021-present
2. Journal Editor: Physics Letters B, Elsevier, 2020-present
3. KITP Advisory Board, 2024-2026
4. Panel Service: Department of Energy, National Science Foundation, APS Fellowship Selection Committee, APS Sakurai Prize Committee, German Research Foundation
5. Grant Referee: NSF, DOE, ERC, STFC, DFG, Simons Foundation, Sloan Foundation, Royal Society URF, Dutch Research Council, FONDECYT, Max Planck Centers

6. Journal Referee: JHEP, Phys.Rev.Lett., Phys.Lett.B, Phys.Rev.D, Nucl.Phys.B, SIGMA

*Conference Organization*

1. Amplitudes 2025, Seoul National University (scientific advisory committee)
2. Amplitudes Planning Committee, 2023-present
3. ICHEP 2024, Prague (session convener)
4. Amplitudes 2024, IAS (scientific advisory committee)
5. Strings 2024, CERN (international advisory committee)
6. Mathematical Aspects of Scattering Amplitudes Program, CMSA, Harvard, 2024 (co-organizer)
7. Solving  $\mathcal{N} = 4$  super-Yang-Mills Theory via Scattering Amplitudes Program, SCGP, Stony Brook, 2024 (co-organizer)
8. Mathematical Aspects of  $\mathcal{N} = 4$  Super-Yang-Mills Theory Workshop, SCGP, Stony Brook, 2024 (co-organizer)
9. Amplitudes 2023, CERN (scientific advisory committee)
10. New England String Meetings, Brown, 2006, 2007, 2008, 2010, 2011, 2014, 2015, 2019, 2020, 2023 (co-organizer)
11. Strings 2022, Vienna (international advisory committee)
12. Amplitudes 2022, Prague (scientific advisory committee)
13. Quantum Theory and Symmetries Symposium 2022, Moscow (advisory committee)
14. Soft Gravitons and Gauge Amplitudes, Asymptotic Symmetries and Bootstrap Session, APS, DPF/DGRAV, New York, 2022 (session chair)
15. IGST2021, Torino, 2021 (session chair)
16. RP90: Twistors from Geometry to Physics, Oxford, 2021 (session chair)
17. Strings 2021, San Paulo (international advisory committee)
18. Amplitudes 2021, NBI, Copenhagen (scientific advisory committee)
19. Strings 2020, Cape Town (international advisory board)
20. Zoomplitudes, 2020, Brown (organizer)
21. QCD Meets gravity 2020, Northwestern University (advisory committee)

22. Cluster Algebras, 2020, Higgs Center, Edinburgh (advisory committee)
23. Amplitudes 2020, University of Michigan (scientific advisory committee)
24. Amplitudes 2018, SLAC, Stanford (scientific advisory committee)
25. MHV @ 30, Amplitudes and Modern Applications, Fermilab, 2016 (co-organizer)
26. AndyFest: A Celebration of the Science of Strominger, Harvard, 2015 (co-organizer)
27. CERN Theory Institute on Scattering Amplitudes, Jul. 2013 (co-organizer)
28. Twelfth Workshop on Non-Perturbative QCD, Paris, 2013 (session organizer)
29. Amplitudes and Periods Workshop, IHES, Paris, 2012 (co-organizer)
30. Harmony of Scattering Amplitudes: from QCD to Gravity Program, KITP, UCSB 2011 (co-organizer)
31. Ninth Workshop on Non-Perturbative QCD, Paris, 2007 (session organizer)
32. High Energy Theory Seminars, KITP, UCSB, 2003–2004 (co-organizer)
33. Current Trends in String Theory and Cosmology Session, APS, DPF, UC Riverside, 2004 (session chair)

*Brown University*

1. Undergraduate Admissions, Brown, 2013–present
2. First Year and Sophomore Advisor, Brown, 2018–2023, 2024–2025

*Physics Department, Brown University*

1. Concentration Advisor: 2024–2025
2. Graduate Advisor: 2013–2016, 2018–2022, 2024–2025
3. Masters Advisor: 2016–2017, 2018–2019, 2020–2022, 2022–2023 (chair), 2024–2025
4. HET Seminars and Journal Clubs Co-Organizer: 2006–2023
5. Master’s Program Task Force: 2022
6. Colloquium Committee: 2015–2016 (chair), 2006–2012
7. Curriculum Committee: 2009–2012, 2022–2023
8. Publication and Outreach Committee: 2006–2009, 2011–2012, 2013–2014, 2019–2020, 2024–2025

9. Faculty Search Committee: 2021 (chair, ad-hoc), 2015 (ad-hoc), 2014 (HET)
10. Junior Faculty Tenure Promotion Committee: 2020
11. Preliminary Exam Committee: Junjie Zheng, 2022; Farrah Simpson, 2021; Wenyu Zhang, 2020; Atreya Chatterjee, 2016; Monica Pangilinan, 2009; Aram Avetisyan, 2009; Kewang Jin, 2008
12. Thesis Exam Committee: Wenyu Zhang, 2020; Junggi Yoon, 2016; Zeynep Demiragli, 2015; Ines Anecito, 2009; Aristomenis Donos, 2007
13. Problems writer for the graduate qualifying exam, 2006-2022

## TEACHING

### Brown University

- S2007: PHYS2300, Quantum Field Theory I (11)
- F2007: PHYS2320, Quantum Field Theory II (10)
- S2008: PHYS2100, General Relativity and Cosmology (16)
- F2008: PHYS1510, Advanced Electromagnetic Theory (17)
- F2008: PHYS27100, Seminar in Research Topics, Scattering Amplitudes (6)
- S2009, PHYS1100, Introduction to General Relativity (11)
- F2009: PHYS1510, Advanced Electromagnetic Theory (10)
- S2010: PHYS2100, General Relativity and Cosmology (8)
- S2010: PHYS2710, Seminar in Research Topics, Supersymmetry (1)
- F2010: PHYS1510, Advanced Electromagnetic Theory (23)
- F2010: PHYS2710, Seminar in Research Topics, AdS/CFT (2)
- F2011: PHYS0720, Methods of Mathematical Physics (23)
- S2012: PHYS2100, General Relativity and Cosmology (8)
- F2013: PHYS2320, Quantum Field Theory II (8)
- S2014: PHYS2100, General Relativity and Cosmology (19)
- F2014: PHYS2070, Advanced Quantum Mechanics (14)
- S2015: PHYS2300, Quantum Field Theory I (8)
- F2015: PHYS2070, Advanced Quantum Mechanics (22)
- S2016: PHYS2300, Quantum Field Theory I (13)
- S2016: PHYS2710, Seminar in Research Topics, Scattering Amplitudes (2)
- F2016: PHYS2070, Advanced Quantum Mechanics (29)

S2017: PHYS2300, Quantum Field Theory I (24)  
F2018: PHYS0720, Methods of Mathematical Physics (6)  
F2018: PHYS2710, Seminar in Research Topics, Scattering Amplitudes (2)  
S2019: PHYS1100, Introduction to General Relativity (11)  
F2019: PHYS0720/1720, Methods of Mathematical Physics (23)  
S2020: PHYS197C, String Theory for Undergraduates (10)  
F2020: PHYS0720/1720, Methods of Mathematical Physics (13)  
S2021: PHYS1100/2100, Introduction to General Relativity (36)  
F2021: PHYS0720/1720, Methods of Mathematical Physics (31)  
F2021: PHYS2710, Seminar in Research Topics, Scattering Amplitudes (2)  
S2022: PHYS1100/2100, Introduction to General Relativity (43)  
F2022: PHYS2320, Quantum Field Theory II (12)  
S2023: PHYS1100/2100, Introduction to General Relativity (44)  
F2024: PHYS0720/1720, Methods of Mathematical Physics (24)  
S2025: PHYS2060, Quantum Mechanics II (34)

#### Brown University graduate students

Chrysostomos Kalousios, Ph.D. 2009, to Humboldt University of Berlin  
Congkao Wen, Ph.D. 2011, to Queen Mary University of London, now faculty  
Dhritiman Nandan, Ph.D. 2013, to Humboldt University of Berlin  
Michael Zlotnikov, Ph.D. 2018, to Columbia University  
Anders Schreiber, Ph.D. 2021, to University of Oxford  
Jorge Mago, Ph.D. 2022, to Goldman Sachs  
Lecheng Ren, Ph.D. 2024, to Queen Mary University of London  
Shounak De, expected Ph.D. 2025, to UPenn+IAS  
Marcos Skowronek, expected Ph.D. 2027

#### Brown University undergraduate students

Laurentiu Rodina '11, UTRA<sup>2</sup>, senior thesis, to Princeton  
Sorawis Sangtawesin '11, UTRA, senior thesis, to Princeton  
Matthew Dodelson '13, summer, to Stanford  
Daniel Parker '15, UTRA, senior thesis, to UC Berkeley  
Ittai Baum '16, UTRA  
Smita Rajan '24, UTRA, senior thesis, to UC Berkeley

Yaxi Chen '24, UTRA, senior thesis, to Brown

Anna Bencke '24, senior thesis, to Blackstone

#### Brown University postdoctoral researchers

Robert McNees, 2006-2007, to Loyola University Chicago

Aaron Simons, 2007-2008, to Virtu Financial

Ari Pakman, 2008-2011, to Columbia

Cristian Vergu, 2008-2011, to ETH Zurich

Ilies Messamah, 2009-2011, to Witwatersrand University

Klaus Larjo, 2011–2012, to Goldman Sachs

Alex Prygarin, 2011–2012, to Ariel University, now faculty

Miguel Paulos, 2012-2014, to CERN, now faculty at ENS Paris

Steven Avery, 2013-2016, to Michigan State

Burkhard Schwab, 2013-2015, to Harvard

Tristan Dennen, 2015-2016, to Google

James Stankowicz, 2016-2018, to BAE Systems

Cheng Peng, 2016-2019, to UC Davis, now faculty at KITS Beijing

David Ramirez, 2019-2022, to École polytechnique

Giulio Salvatori, 2019-2020, to Perimeter+IAS

Akshay Yellespur Srikant, 2020-2023, to Oxford

Adam Ball, 2022-2023, to Perimeter

Andrzej Pokraka, 2022-2025, to Amsterdam+IAS

Shruti Paranjape, 2024-2027

#### Harvard University

F1998: PHYSICS 153, Electrodynamics, Teaching Assistant

F1999: PHYSICS 210, General Theory of Relativity, Teaching Assistant

F2000: PHYSICS 210, General Theory of Relativity, Teaching Assistant

F2001: PHYSICS 284, Group Theory in Physics, Teaching Assistant

#### Moscow, High School

Fall 1995–Spring 1997: Geometry, Instructor, Physics-mathematics MIPT correspondence High School #2, Moscow