

# Jaroslav Trnka

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CONTACT INFORMATION	Center for Quantum Mathematics and Physics, Department of Physics, University of California, One Shields Ave, Davis, CA, USA.	Homepage: <a href="http://physics.ucdavis.edu/trnka">http://physics.ucdavis.edu/trnka</a> Phone: (530) 752-1500 ✉ E-mail: <a href="mailto:trnka@ucdavis.edu">trnka@ucdavis.edu</a>
RESEARCH INTERESTS	High Energy Theory, Quantum Field Theory, New Methods for Scattering Amplitudes.	
ACADEMIC POSITIONS	<b>University of California, Davis, USA, Professor</b>	2022–
	<b>Charles University in Prague, Czech Republic, Visiting Professor</b>	2022–2023
	<b>University of California, Davis, USA, Associate Professor</b>	2019–2022
	<b>University of California, Davis, USA, Assistant Professor</b>	2015–2019
	<b>California Institute of Technology, Pasadena, USA, Prize Postdoctoral Fellow</b>	2013–2015
EDUCATION	<b>Princeton University, Princeton, USA, PhD in Physics</b>	September 2013
	<b>Charles University, Prague, Czech Republic, MS in Theoretical Physics</b>	2008
	<b>Charles University, Prague, Czech Republic, Bc in Physics</b>	2006
HONORS & AWARDS	<b>Chancellor's Fellow, UC Davis</b>	2021
	<b>Distinguished Teaching Award, UC Davis</b>	2021
	<b>Henry Primakoff Award in Particle Physics, American Physical Society (APS)</b>	2020
	<b>Undergraduate Teaching Award, College of Letters and Science, UC Davis</b>	2020
	<b>Particle Physics Prize, International Union of Pure and Applied Physics (IUPAP)</b>	2018
	<b>UC Davis Award for Creativity and Innovation, UC Davis</b>	2018
	<b>Prize Postdoctoral Award, Caltech</b>	2013
	<b>Vaclav Votruba Award, for best PhD thesis in theoretical physics</b>	2013
	<b>Milan Odehnal Prize, Czech Physical Society</b>	2012
	<b>Joseph Henry Prize, Princeton University</b>	2008
	<b>Fulbright Science and Technology Award, Department of State</b>	2008
	<b>McKinsey Award, Czech Republic</b>	2008
	<b>GAUK, Student research grant, Czech Republic</b>	2007
	<b>Praemium Bohemiae Prize, for representation of the Czech Republic at the IPhO</b>	2003
	<b>Honorary Sheet, Minister of Education of the Czech Republic</b>	2003
PUBLICATIONS & PREPRINTS	<i>Total: 50+ papers, 5200+ citations, h-index 35 (Google Scholar)</i> <i>Authors in all articles in an alphabetical order</i>	
	<b>53. Poles at Infinity in On-shell Diagrams</b> JHEP <b>02</b> , 003 (2023). (with T. Brown, U. Oktem)	
	<b>52. Snowmass Theory Frontier Report</b> arxiv:2211.05772. (with N. Craig, C. Csaki, A. X. El-Khadra et al.)	
	<b>51. Snowmass TF04 Report: Scattering Amplitudes and their Applications</b> arxiv:2210.03146. (with Z. Bern)	
	<b>50. Non-planar BCFW Grassmannian Geometries</b> JHEP <b>12</b> , 084 (2022). (with S. Paranjape, M. Zheng)	
	<b>49. Solving Scattering in N= 4 Super-Yang-Mills Theory</b> (Snowmass white paper) arxiv:2207.10636. (with N. Arkani-Hamed, L. Dixon, A. McLeod, M. Spradlin, A. Volovich)	
	<b>48. Recursion Relations for One-Loop Goldstone Boson Amplitudes</b> Phys.Rev.D <b>106</b> (2022) 7, 076008. (with C. Bartsch, K. Kampf)	
	<b>47. Positive Geometry of Scattering Amplitudes</b> J.Phys.A <b>55</b> (2022) 44, 443001. Chapter 7 of the SAGEX review (with E. Herrmann)	

- 46. Integrands of Less-Supersymmetric Yang-Mills at One Loop**  
 JHEP **03**, 126 (2022). (with J. Bourjaily, E. Herrmann, C. Langer, K. Patatoukos, M. Zheng)
- 45. Nonperturbative Negative Geometries: Amplitudes at Strong Coupling**  
 JHEP **03**, 108 (2022). (with N. Arkani-Hamed, J. Henn)
- 44. Multi-spin soft bootstrap and scalar-vector Galileon**  
 JHEP **07**, 153 (2021). (with K. Kampf, J. Novotny, F. Preucil)
- 43. Towards the Gravituhedron: New Expressions for NMHV Gravity Amplitudes**  
 JHEP **04**, 253 (2021)
- 42. Positive geometry, local triangulations, and the dual of the Amplituhedron**  
 JHEP **01**, 035 (2021). (with E. Herrmann, C. Langer, M. Zheng)
- 41. Building Bases of Loop Integrands**  
 JHEP **11**, 116 (2020). (with J. L. Bourjaily, E. Herrmann, C. Langer)
- 40. Positive Geometries for One-Loop Chiral Octagons**  
 arxiv:2007.12191. (with E. Herrmann, C. Langer, M. Zheng)
- 39. All-Multiplicity Non-Planar MHV Amplitudes in sYM at Two Loops**  
 Phys. Rev. Lett. **124**, no. 11, 111603 (2020). (with J. Bourjaily, E. Herrmann, C. Langer, A. McLeod)
- 38. New Soft Theorems for Goldstone Boson Amplitudes**  
 Phys. Rev. Lett. **124**, no. 11, 111601 (2020). (with K. Kampf, J. Novotny, M. Shifman)
- 37. Gravity loop integrands from the ultraviolet**  
 SciPost Phys. **10** (2021) 016. (with A. Edison, E. Herrmann, J. Parra-Martinez)
- 36. Prescriptive Unitarity for Non-Planar Six-Particle Amplitudes at Two Loops**  
 JHEP **1912**, 073 (2019). (with J. L. Bourjaily, E. Herrmann, C. Langer, A. J. McLeod)
- 35. Maximally supersymmetric amplitudes at infinite loop momentum**  
 Phys. Rev. D **99**, no. 6, 066006 (2019). (with J. L. Bourjaily, E. Herrmann)
- 34. Deep Into the Amplituhedron: Amplitude Singularities at All Loops and Legs**  
 Phys. Rev. Lett. **122**, no. 5, 051601 (2019). (with N. Arkani-Hamed, C. Langer, A. Y. Srikant)  
 Paper awarded **Editor's Suggestion of Physical Review Letters**
- 33. UV cancellations in gravity loop integrands**  
 JHEP **1902**, 084 (2019). (with E. Herrmann)
- 32. Vector Effective Field Theories from Soft Limits**  
 Phys. Rev. Lett. **120**, no. 26, 261602 (2018). (with Cheung, Kampf, Novotny, Shen, Wen)
- 31. Unwinding the Amplituhedron in Binary**  
 JHEP **1801**, 016 (2018). (with N. Arkani-Hamed, H. Thomas)
- 30. Locality and Unitarity from Singularities and Gauge Invariance**  
 Phys. Rev. Lett. **120**, no. 23, 231602 (2018). (with N. Arkani-Hamed, L. Rodina)
- 29. Prescriptive Unitarity**  
 JHEP **1706**, 059 (2017). (with J. L. Bourjaily, E. Herrmann)
- 28. Multi-loop positivity of the planar  $\mathcal{N} = 4$  SYM six-point amplitude**  
 JHEP **1702**, 112 (2017). (with L. J. Dixon, M. von Hippel, A. J. McLeod)
- 27. A Periodic Table of Effective Field Theories**  
 JHEP **1702**, 020 (2017). (with C. Cheung, K. Kampf, J. Novotny, C. H. Shen)
- 26. Gravity On-shell Diagrams**  
 JHEP **1611**, 136 (2016). (with E. Herrmann)
- 25. Evidence for a Nonplanar Amplituhedron**  
 JHEP **1606**, 098 (2016). (with Z. Bern, E. Herrmann, S. Litsey, J. Stankowicz)
- 24. On-Shell Recursion Relations for Effective Field Theories**  
 Phys. Rev. Lett. **116**, no. 4, 041601 (2016). (with C. Cheung, K. Kampf, J. Novotny, C. H. Shen)  
 Paper awarded **Editor's Suggestion of Physical Review Letters**
- 23. Local Integrand Representations of All Two-Loop Amplitudes in Planar SYM**

- JHEP **1508**, 119 (2015). (with J. L. Bourjaily)
- 22. Simple Recursion Relations for General Field Theories**  
JHEP **1506**, 118 (2015). (with C. Cheung, C. H. Shen)
- 21. Logarithmic Singularities and Maximally Supersymmetric Amplitudes**  
JHEP **1506**, 202 (2015). (with Z. Bern, E. Herrmann, S. Litsey, J. Stankowicz)
- 20. Positive Amplitudes In The Amplituhedron**  
JHEP **1508**, 030 (2015). (with N. Arkani-Hamed, A. Hodges)
- 19. On-Shell Structures of MHV Amplitudes Beyond the Planar Limit**  
JHEP **1506**, 179 (2015). (with N. Arkani-Hamed, J. L. Bourjaily, F. Cachazo, A. Postnikov)
- 18. Effective Field Theories from Soft Limits of Scattering Amplitudes**  
Phys. Rev. Lett. **114**, no. 22, 221602 (2015). (with C. Cheung, K. Kampf, J. Novotny)
- 17. Anatomy of the Amplituhedron**  
JHEP **1503**, 128 (2015). (with S. Franco, D. Galloni, A. Mariotti)
- 16. Dual-Conformal Regularization of Infrared Loop Divergences**  
JHEP **1501**, 001 (2015). (with J. L. Bourjaily, S. Caron-Huot)
- 15. Singularity Structure of Maximally Supersymmetric Scattering Amplitudes**  
Phys. Rev. Lett. **113**, no. 26, 261603 (2014). (with N. Arkani-Hamed, J. L. Bourjaily, F. Cachazo)
- 14. Into the Amplituhedron**  
JHEP **1412**, 182 (2014). (with N. Arkani-Hamed)
- 13. The Amplituhedron**  
JHEP **1410**, 030 (2014) (with N. Arkani-Hamed)
- 12. Tree-level Amplitudes in the Nonlinear Sigma Model**  
JHEP **1305**, 032 (2013). (with K. Kampf, J. Novotny)
- 11. Recursion relations for tree-level amplitudes in the  $SU(N)$  nonlinear sigma model**  
Phys. Rev. D **87**, no. 8, 081701 (2013). (with K. Kampf, J. Novotny)
- 10. A Note on Polytopes for Scattering Amplitudes**  
JHEP **1204**, 081 (2012). (with N. Arkani-Hamed, J. L. Bourjaily, F. Cachazo, A. Hodges)
- 9. Local Integrals for Planar Scattering Amplitudes**  
JHEP **1206**, 125 (2012). (with N. Arkani-Hamed, J. L. Bourjaily, F. Cachazo)
- 8. New differential equations for on-shell loop integral**  
JHEP **1104**, 083 (2011). (with J. M. Drummond, J. M. Henn)
- 7. The All-Loop Integrand For Scattering Amplitudes in Planar  $N=4$  SYM**  
JHEP **1101**, 041 (2011). (with N. Arkani-Hamed, J. L. Bourjaily, F. Cachazo, S. Caron-Huot)
- 6. The Grassmannian and the Twistor String: Connecting All Trees in  $N=4$  SYM**  
JHEP **1101**, 038 (2011). (with J. L. Bourjaily, A. Volovich and C. Wen)
- 5. Unification of Residues and Grassmannian Dualities**  
JHEP **1101**, 049 (2011). (with N. Arkani-Hamed, J. Bourjaily, F. Cachazo)
- 4. Local Spacetime Physics from the Grassmannian**  
JHEP **1101**, 108 (2011). (with N. Arkani-Hamed, J. Bourjaily, F. Cachazo)
- 3. Renormalization and additional degrees of freedom within the chiral effective theory**  
Phys. Rev. D **81**, 116004 (2010). (with K. Kampf, J. Novotny)
- 2. High energy constraints in the octet SS-PP correlator and resonance saturation**  
Phys. Rev. D **81**, 056005 (2010). (with J. J. Sanz-Cillero)
- 1. On different lagrangian formalisms for vector resonances within ChPT**  
Eur. Phys. J. C **50**, 385 (2007). (with K. Kampf, J. Novotny)

## BOOKS

- Grassmannian Geometry of Scattering Amplitudes**, Cambridge University Press (2016)  
(with N. Arkani-Hamed, J. L. Bourjaily, F. Cachazo, A. Goncharov, A. Postnikov)

MY RESEARCH  
IN POPULAR  
PRESS

N. Wolchover, Different Kind of Theory of Everything, *New Yorker*, February 19, 2019  
 On the Polygonal Front Lines: Visualizing the Amplituhedron, *Wolfram Language*, 2019  
 What is the Amplituhedron? The Graduate Student Session, *Notices of the AMS*, 2018  
 D. Kosower, Extending an Alternative to Feynman Diagrams, *APS Viewpoint*, 2016  
 Discover magazine, The Top 10 Science Stories of 2013: *Amplituhedron Shapes the Future of Physics*.  
 E. Reich, Rethinking Particle Dynamics, *Nature*, **502**, 2013, 19.  
 R. Highfield, Physics Won't be the Same Again, *The Telegraph*, 8 October 2013.  
 N. Wolchover, A Jewel at the Heart of Quantum Physics, *Quanta Magazine*, 2013.  
 A. Hodges, Particle Physics: Theory with a Twistor, *Nature Physics*, **9**, 2013, 205-206.  
 N. Turok, Particle Physics: Beyond Feynman's Diagrams, *Nature*, **469**, 2011, 165-166.

MENTORING

<b>Taro Brown</b> , PhD student, UC Davis	exp 2025
<b>Umut Oktem</b> , PhD student, UC Davis	exp 2025
<b>Christoph Bartsch</b> , PhD student, Prague (co-supervised with K.Kampf)	exp 2024
<b>Minshan Zheng</b> , PhD student, UC Davis	PhD 2022
<b>Cameron Langer</b> , PhD student, UC Davis (then postdoc at Penn State)	PhD 2020
<b>Chia-Hsien Shen</b> , PhD student, Caltech (co-supervised with C.Cheung; then postdoc UCLA, then UCSD)	PhD 2017
<b>Enrico Herrmann</b> , PhD student, Caltech (then postdoc at SLAC, then UCLA, now faculty position at King's College)	PhD 2017

INVITED TALKS

*Total: 120+ invited talks at conferences, workshops, seminars and colloquia.*

<b>Invited seminar</b> , Humboldt University, Berlin, Germany	May 2023
<b>Hidden Mathematical Structures of the Amplituhedron</b> , Dublin, Ireland	Apr 2023
<b>Invited seminar</b> , Durham University, UK	Apr 2023
<b>Invited colloquium</b> , University of Edinburgh, UK	Apr 2023
<b>Invited seminar</b> , University of Pisa, Italy	Mar 2023
<b>Invited theory colloquium</b> , CERN, Switzerland	Mar 2023
<b>Invited seminar</b> , Max Planck Institute for Physics, Munich, Germany	Feb 2023
<b>Invited seminar</b> , Penn State University, PA	Feb 2023
<b>Workshop on Cosmology, Gravitation and Particle Physics</b> , Prague	Dec 2022
<b>Invited seminar</b> , Institute for Theoretical Physics, Charles University, Prague	Nov 2022
<b>Integrability in Gauge and String Theory</b> , Budapest, Hungary	July 2022
<b>Strings 2022</b> , Vienna, Austria	July 2022
<b>Amplitudes Meets Cosmology</b> , Scotland, UK	May 2022
<b>Invited seminar</b> , Paris Rencontres Theoriciennes seminar series, France (virtual)	May 2022
<b>Invited seminar</b> , Harvard University, Cambridge, MA	Apr 2022
<b>Recent Developments in Scattering Amplitudes</b> , CUNY, NY (virtual)	Nov 2021
<b>Twistor Theory and Beyond</b> , Cambridge, UK (virtual)	Sep 2021
<b>Amplitudes 2021</b> , Copenhagen, Denmark (virtual)	Aug 2021
<b>Positive Geometries of Scattering Amplitudes</b> , Mainz, Germany (virtual)	Jun 2021
<b>Invited seminar</b> , Max Planck Institute, Munich (virtual)	Jun 2021
<b>APS April meeting</b> (plenary talk, virtual)	Apr 2021
<b>California Amplitudes Meeting</b> (virtual)	Apr 2021
<b>APS Annual Leadership Meeting</b> (virtual)	Jan 2021
<b>Invited colloquium</b> , Sacramento State University, CA (virtual)	Oct 2020
<b>Invited colloquium</b> , University of California, Davis, CA (virtual)	Oct 2020
<b>ICHEP 2020</b> (panel discussion), Prague, Czech Republic (virtual)	Jul 2020
<b>Invited seminar</b> , UCLA, Los Angeles, CA (virtual).	Apr 2020
<b>Invited seminar</b> , Caltech, Pasadena, CA (virtual).	Apr 2020

<b>QCD meets gravity IV</b> , University of California, Los Angeles, CA	Dec 2019
<b>Invited seminar</b> , IPMU, Tokyo, Japan.	Dec 2019
<b>String theory workshop</b> , KEK, Japan	Dec 2019
<b>Invited seminar</b> , at Brown University, Providence, MA	Nov 2019
<b>From Scattering to Expansion</b> , Northwestern, Chicago, IL	Oct 2019
<b>Quantum Mechanics and Spacetime</b> , CMSA, Harvard University, MA	Oct 2019
<b>Invited seminar</b> , SLAC, Menlo Park, CA	Sep 2019
<b>Invited seminar</b> , Czech Academy of Sciences, Prague, Czech Republic	Aug 2019
<b>Invited seminar</b> , Humboldt University, Berlin, Germany	Aug 2019
<b>Invited seminar</b> , Max-Planck Institute, Munich, Germany	Jul 2019
<b>Invited seminar</b> , Niels Bohr Institute, Copenhagen, Denmark	Jul 2019
<b>Integrable Systems and Quantum Symmetries</b> , Prague, Czech Republic	Jul 2019
<b>Lie Groups and Their Applications in Physics</b> Varna, Bulgaria	Jun 2019
<b>Invited seminar</b> , University of Michigan, Ann Arbor, MI	May 2019
<b>Invited seminar</b> , Lund University, Sweden	Dec 2018
<b>Invited seminar</b> , University of Minnesota, Minneapolis, MN	Nov 2018
<b>Amplitudes at LHC</b> , Galileo Galilei Institute, Florence, Italy	Oct 2018
<b>Supergravity and Superstring Theory</b> , Penn State, State College, PA	Sep 2018
<b>Current Themes in High Energy Physics</b> , Niels Bohr Institute, Denmark	Aug 2018
<b>Invited seminar</b> , Humboldt University, Berlin, Germany	Jul 2018
<b>Group Theoretical Methods in Physics</b> , Prague, Czech Republic	Jul 2018
<b>ICHEP 2018</b> (plenary talk), Seoul, Korea	Jul 2018
<b>Cluster Algebras and Mathematical Physics</b> , Michigan State, East Lansing, MI	May 2018
<b>California Amplitudes Meeting</b> , SLAC, Menlo Park, USA	Apr 2018
<b>Invited seminar</b> , Texas A&M, College Station, TX	Apr 2018
<b>Invited seminar</b> , Charles University, Prague, Czech Republic	Dec 2017
<b>Bay Area Particle Theory Meeting</b> , San Francisco, CA	Oct 2017
<b>Mathematics and Physics of Scattering Amplitudes</b> , Munich, Germany	Aug 2017
<b>Invited seminar</b> , University of Oregon, Eugene, OR	Apr 2017
<b>Invited seminar</b> , University of California, Irvine, CA	Apr 2017
<b>Invited colloquium</b> , San Francisco State University, CA	Apr 2017
<b>Invited seminar</b> , SLAC, Menlo Park, CA	Jan 2017
<b>Invited seminar</b> , University of Mainz, Germany	Nov 2016
<b>Amplitudes in Asia</b> , Beijing, China	Oct 2016
<b>New Formulations for Scattering Amplitudes</b> , Munich, Germany	Sep 2016
<b>IGST 2016 Focus program</b> , Berlin, Germany	Aug 2016
<b>Electroweak matter 2016</b> , University of Stavanger, Norway	Jul 2016
<b>Amplitudes 2016</b> , Nordita, Stockholm, Sweden	Jul 2016
<b>Twistors, Gravity and Amplitudes</b> , Newton Institute, Cambridge, UK	Jun 2016
<b>Invited seminar</b> , University of Chicago, IL	May 2016
<b>Invited seminar</b> , California Institute of Technology, Pasadena, CA	May 2016
<b>Invited seminar</b> , Perimeter Institute, Waterloo, Canada	May 2016
<b>QCD meets gravity</b> , Edinburgh, UK	Apr 2016
<b>MHV at 30</b> , Fermilab, Chicago, IL	Mar 2016
<b>Emergent Themes in String Theory</b> , University of Michigan, Ann Arbor, MI	Mar 2016
<b>Invited seminar</b> , University of California, Berkeley, CA	Mar 2016
<b>Invited seminar</b> , National Taiwan University, Taipei, Taiwan	Jan 2016
<b>Invited seminar</b> , City College of New York, NY	Sep 2015
<b>Hidden Symmetries and Integrability Methods</b> , CRM Montreal, Canada	Aug 2015
<b>Positive Grassmannians</b> , CRM Montreal, Canada	Jul 2015
<b>Invited seminar</b> , LMU Munich, Germany	Jun 2015

<b>Radcor 2015</b> , University of California, Los Angeles, CA	Jun 2015
<b>Gravity: From UV to IR</b> , University of California, Santa Barbara, CA	May 2015
<b>String, Branes and Holography</b> , Texas A&M, TX	Apr 2015
<b>Eurostrings 2015</b> , Cambridge, UK	Mar 2015
<b>Invited seminar</b> , Charles University, Prague, Czech Republic	Mar 2015
<b>Invited seminar</b> , University of California, Los Angeles, CA	Mar 2015
<b>Invited seminar</b> , University of California, Davis, CA	Mar 2015
<b>Invited seminar</b> , Arizona State University, Phoenix, AZ	Dec 2014
<b>IAS Focused Program on Scattering Amplitudes</b> , Hong Kong	Nov 2014
<b>Geometry of Scattering Amplitudes</b> , Oxford, UK	Sep 2014
<b>Strings 2014</b> , Princeton, NJ	Jun 2014
<b>Invited seminar</b> , University of Texas, Austin, TX	May 2014
<b>Invited seminar</b> , Stanford University, Stanford, CA	May 2014
<b>Invited seminar</b> , University of Michigan, Ann Arbor, MI	Mar 2014
<b>Invited seminar</b> , Brown University, Providence, RI	Mar 2014
<b>Invited seminar</b> , Harvard University, Cambridge, MA	Mar 2014
<b>Invited seminar</b> , University of California, Berkeley, CA	Feb 2014
<b>Invited seminar</b> , University of California, Los Angeles, CA	Feb 2014
<b>Invited seminar</b> , Czech Technical University, Prague, Czech Republic	Jan 2014
<b>Geometry of Scattering Amplitudes</b> , Stony Brook, NY	Dec 2013
<b>Invited seminar</b> , Humboldt University, Berlin, Germany	Oct 2013
<b>Physics and Mathematics of Scattering Amplitudes</b> , Stony Brook, NY	Oct 2013
<b>Integrability in Gauge and String Theory 2013</b> , Utrecht, Netherlands	Aug 2013
<b>Amplitudes, Strings and Branes</b> , CERN, Geneva, Switzerland	Jul 2013
<b>Polylogarithms: Number Theory and Particle Physics</b> , Durham, UK	Jul 2013
<b>Amplitudes 2013</b> , Schloss Ringelberg, Germany	Apr 2013
<b>Amplitudes and Periods</b> , IHES, Paris, France	Dec 2012
<b>Invited seminar</b> , Czech Academy of Sciences, Prague, Czech Republic	Nov 2012
<b>Invited seminar</b> , Princeton University	Oct 2012
<b>Geometry of Scattering Amplitudes</b> , Banff, Canada	Aug 2012
<b>Scattering Amplitudes: from QCD to Super Yang-Mills</b> , Trento, Italy	Jul 2012
<b>Amplitudes 2012</b> , Munich, Germany	Mar 2012
<b>Invited seminar</b> , Charles University, Prague, Czech Republic	Dec 2011
<b>Amplitudes 2011</b> , University of Michigan, Ann Arbor, MI	Nov 2011
<b>Exact results in Gauge/Gravity dualities</b> , Perimeter Institute, Waterloo, Canada	Sep 2011
<b>Invited seminar</b> , Humboldt University, Berlin, Germany	Jan 2011
<b>Invited seminar</b> , Albert Einstein Institute, Potsdam, Germany	Jan 2011
<b>Quarks 2010</b> , Kolomna, Russia	Jun 2010
<b>Effective Field Theories: from pion to upsilon</b> , Valencia, Spain	Feb 2009
<b>14th International QCD Conference</b> , Montpellier, France	Jul 2008
<b>EuroFlavor 07</b> , Orsay, France	Nov 2007
<b>Hadron Structure</b> , Modra, Slovakia	Sep 2007

LECTURING AT  
SUMMER  
SCHOOLS

<b>Amplitudes 2022 Summer School</b> , Prague, Czech Republic.	Aug 2022
<b>Cluster Algebras School</b> , ICTS, Bengalore, India.	Dec 2018
<b>Qspace training school</b> , Benasque, Spain.	Sep 2018
<b>Amplitudes 2017 Summer School</b> , Edinburgh, UK.	Jul 2017
<b>Summer School on Particle Physics</b> , ICTP, Trieste, Italy	Apr 2017
<b>School on Amplitudes in Beijing</b> , Beijing, China	Nov 2016
<b>Asian Winter School</b> , Okinawa, Japan	Jan 2016
<b>Winter School on Geometry and Physics</b> , Srni, Czech Republic	Jan 2014

ORGANIZATION: *Organizer of 25 conferences, workshops and scientific programs.*

CONFERENCES

AND WORKSHOPS

Workshop <b>Scattering amplitudes and cosmology</b> , ICTP Trieste, Italy	Apr 2023
Conference <b>Amplitudes 2022</b> , Prague, Czech Republic	Aug 2022
Conference <b>ICHEP 2022</b> (session convener), Bologna, Italy	Jul 2022
Program <b>Novel Developments in Scattering Amplitudes</b> , Munich, Germany	Jul 2022
Workshop <b>California Amplitudes Meeting</b> , UC Davis	Apr 2022
Workshop <b>Geomplitudes III</b> , UC Davis (virtual)	Jun 2021
Workshop <b>Geomplitudes II</b> , UC Davis (virtual)	Feb 2021
Workshop <b>Geomplitudes I</b> , UC Davis (virtual)	Sep 2020
<b>KITP reunion: Scattering Amplitudes and Beyond</b> , KITP, CA (virtual)	Aug 2020
Conference <b>ICHEP 2020</b> (session convener), Prague Czech Republic (virtual)	Jul 2020
Conference <b>Amplitudes 2020</b> , University of Michigan, Ann Arbor, MI (virtual)	May 2020
Conference <b>Amplitudes 2019</b> , Dublin, Ireland	Jul 2019
Fourth workshop <b>Amplitudes in California</b> , University of California, Davis	Jun 2019
Conference <b>Amplitudes 2018</b> , SLAC, Menlo Park, CA	Jun 2018
<b>QMAP Amplitudes Summer School</b> , University of California, Davis	Jun 2018
Workshop <b>QCD meets gravity</b> , University of California, Los Angeles	Dec 2017
Program <b>Scattering Amplitudes and Beyond</b> , KITP, Santa Barbara	Apr-Jun 2017
Program <b>Amplitudes, Motives and Beyond</b> , Mainz, Germany	Feb 2017
Conference <b>Recent Developments in Fields, String, Gravity</b> , UC Davis	Dec 2016
Workshop <b>QCD meets gravity</b> , University of California, Los Angeles	Dec 2016
Second workshop <b>Amplitudes in California</b> , University of California, Los Angeles	Oct 2016
First workshop <b>Amplitudes in California</b> , University of California, Davis	Jun 2016
Workshop <b>Amplitudes in Asia</b> , Taipei, Taiwan	Nov 2015
Program <b>From Scattering Amplitudes to Conformal Bootstrap</b> , Aspen, CO	Jul 2015
Conference <b>Grassmannian Geometry of Scattering Amplitudes</b> , Pasadena, CA	Dec 2014
Workshop <b>Amplitudes at Caltech</b> , Pasadena, CA	Feb 2014

GRANTS

<b>Collaborative Interdisciplinary Research Grant</b> , <i>UC Davis</i> , \$25,000	2021–2022
<b>DOE Grant Award</b> , <i>Department of Energy</i> , \$731,000 (with two colleagues)	2020–2023
<b>NSF Award</b> , <i>conference organization</i> , \$5,000	2018
<b>DOE Grant Award</b> , <i>Department of Energy</i> , \$857,000 (with two colleagues)	2017–2020

PROFESSIONAL  
ACTIVITIES

**Topical group convener** for the 2021 Snowmass process (TF04 scattering amplitude)

**Panelist:** Department of Energy Comparative Reviews.

**Reviewer:** European Research Council (ERC), National Science Foundation (NSF), STFC Particle Physics Grant Panel, Department of Energy (DOE), Swiss National Science Foundation.

**Referee:** Journal of High Energy Physics, Physical Review D, Physical Review Letters, Nuclear Physics B, Journal of Cosmology and Astroparticle Physics, Journal of Physics A, Physical Letters B, Classical and Quantum Gravity, Canadian Journal of Mathematics, Annales de l'Institut Henri Poincaré D, Mathematical Reviews

**Member:** APS Selection Committee for Henry Primakoff Prize.

**Outreach:** invited talks at undergraduate students physics clubs (UC Davis, Stony Brook, Prague).

## TEACHING

**Charles University, Prague**

Instructor, Introduction to Scattering Amplitudes

Fall 2022

**University of California, Davis**

Instructor, PHY 105B Classical Mechanics II

Spring 2022

Instructor, PHY 9B Classical Physics

Fall 2021

Instructor, PHY 232 Topics in String theory (virtual)

Winter 2021

Instructor, PHY 9B Classical Physics (virtual)

Fall 2020

Instructor, PHY 232 Topics in String theory (virtual)

Spring 2020

Instructor, PHY 9B Classical Physics

Winter 2020

Instructor, PHY 250 Topic course on string amplitudes

Spring 2019

Instructor, PHY 9B Classical Physics

Winter 2019

Instructor, PHY 250 Topic course on superstrings

Spring 2018

Instructor, PHY 9B Classical Physics

Winter 2018

Instructor, PHY 250 Topic course on bosonic strings

Winter 2017

Instructor, PHY 9B Classical Physics

Winter 2017

Instructor, PHY 250 Topic course on scattering amplitudes

Winter 2016

## CAMPUS

## SERVICE

**Department Representative**, College of Letters and Science Assembly

2021 –

**Member**, Campus Judicial Board

2021 –

**Chair**, College of Letters and Science Teaching Awards committee

2020 –

**Member**, Graduate Council - Courses Subcommittee

2020 –

**Reviewer**, Graduate Students Teaching Awards

2020