

## Personal

Born June 17, 1975

Citizenship: USA, UK

Marital Status: Married

email: [daniel@uci.edu](mailto:daniel@uci.edu), [Homepage](#)

## Professional Appointments

- 2016-present **Professor**, Dept. of Physics and Astronomy, *University of California, Irvine*
- 2014-present **Joint Appt.**, Dept. of Logic and Philosophy of Science, *University of California, Irvine*
- 2011-2016 **Associate Professor**, Dept. of Physics and Astronomy, *University of California, Irvine*
- 2007-2011 **Assistant Professor**, Dept. of Physics and Astronomy, *University of California, Irvine*
- 2004-2007 **Postdoctoral Fellow**, Dept. of Physics, *University of Pennsylvania*

## Education

- 1998-2003 **Ph.D.**, Department of Physics, *University of California at Berkeley*.  
DZero Experiment, Advisor: Prof. Mark Strovink
- 1997-1998 **Fullbright Fellowship**, *Niels Bohr Institute*, Copenhagen, Denmark.  
*DELPHI experiment*
- 1993-1997 **B.A.**, *Rice University*, Houston, Texas.  
Majors: Physics and Computer Science  
Presidential Honor Roll all eight semesters, Graduated *Magna Cum Laude*

## Awards

- 2021 Emmy (nomination), Outstanding Preschool Children's Animated Series, for Elinor Wonders Why
- 2020 Special Recommendation Award for Youth Science Popularization for We Have No Idea, Taiwanese translation
- 2016 Fellow of the American Physical Society
- 2016 UC Irvine Chancellor's Award for Excellence in Fostering Undergraduate Research (supervisor)
- 2015 Webby Award for Experimental and Innovative App (CRAYFIS): [crayfis.io](http://crayfis.io)
- 2013 UC Irvine Chancellor's Award for Excellence in Undergraduate Research (supervisor of awardee)
- 2010 Alfred P. Sloan Foundation Fellow
- 2007 DOE Outstanding Junior Investigator
- 1997 Fulbright Fellow
- 1997 *Magna Cum Laude* Graduation, Rice University

1993-1997 Max Roy Full-Tuition Scholarship, Rice University

---

## Leadership and Service

- 2021- Co-convenor of ATLAS Machine Learning Forum
- 2020- Chair, Communication Committee, Department of Physics and Astronomy, UC Irvine
- 2020- Snowmass 2020, co-convenor of Machine Learning Working Group
- 2013-2019 Vice-chair of Department of Physics and Astronomy, UC Irvine
- 2012-13 Snowmass 2013, convenor Searches for New Particles
  - 2013 Experimental Representative, Snowmass DPF Theory Panel
- 2012- Member, FNAL Tollestrup Award Committee, Chair (2013-)
- 2011- Reviewer, *Physics Letters B*.
- 2012- Reviewer, *Physical Review Letters*
- 2011,12 Review Panel, Dept of Energy Comparative Theory Review
- 2010-2011 Convenor, ATLAS Exotics Lepton+X group
- 2010-2013 Statistics Coordinator, ATLAS Exotic physics group
  - 2008- Member, CDF Statistics Committee
- 2006-2007 Convenor, CDF Top Quark Mass group

---

## Public Outreach

- 2021 An evening with Carlo Rovelli, May 2021
- 2020 OneLLP, Dec 2020
- 2020 North London Collegiate School, Aug 2020
- 2020 Lyceans Club, Mar 2020
- 2019 TEDx San Francisco, October
- 2019 Presentation: “We Have No Idea”, Cham and Whiteson, Atlas Obscura (May), WOMAD (July)
- 2018 Media appearances: Rice Magazine ([link](#)), Radio Live New Zealand ([link](#)), People Behind the Science ([link](#)), Liberation (French) ([link](#))
- 2018 Presentation: “We Have No Idea”, Cham and Whiteson, University of Virginia (Jan 24), NC Museum of Natural History (Jan 25 and Jan 27 and Jan 28), Secret Science Club of NYC (Jan 29), UT Austin (Feb 21), Texas A&M (Feb 22), Univ of Houston (Feb 24), Frontiers Lecture at Hayden Planetarium (Mar 12), Caveat NYC (Mar 14), Columbia Nevis (Mar 15), Freethought Festival at Madison (Mar 17), Aspen Center for Physics Public Lecture at Wheeler Opera House (Mar 28), Irons Lecture at Rutgers Univ (Apr 14), UC Irvine (Apr 20), Arthur C Clarke Center at UCSD (May 8), San Diego State Univ (May 8), Atlas Obscura (May 31, 2018), New Scientist Live (Sep)
- 2018 Book: Estonian Edition “We have no idea”, Cham and Whiteson, Hea Lugu
- 2018 Book: French Edition “We have no idea”, Cham and Whiteson, Flammarion
- 2018 Book: German Edition “We have no idea”, Cham and Whiteson, C. Bertelsmann
- 2017 Popular Science Writing: Aeon ([link](#)), Scientific American ([link](#)), Physics World ([link](#))

- 2017 Media appearances: Science Friday ([link](#)), Space.com ([link](#)), Chemistry World ([link](#)), Nature podcast ([link](#)), NPR's Here and Now ([link](#)), The Larry Meiller Show ([link](#)), Progressive Spirit ([link](#)), Midnight in the Desert ([link](#)), Part-time Genius ([link](#)), Leonard Lopate Show ([link](#)), Unbound Worlds ([link](#))
- 2017 Science Comics: SMBC ([link](#)), Wondermark ([link](#))
- 2017 Video: "The Shape of Space", Reich, Cham, Whiteson ([link](#))
- 2017 Video: "This Particle Breaks Time Symmetry", Muller, Cham, Whiteson ([link](#))
- 2017 Video: "The Shape of Space", Reich, Cham, Whiteson ([link](#))
- 2017 Video: "What We (Don't) Know About Dark Matter", Hanson, Cham, Whiteson ([link](#))
- 2017 Video: "Strange Unexplained Cosmic Rays", Cowen, Cham, Whiteson ([link](#))
- 2017 Book: Spanish Edition "We have no idea", Cham and Whiteson, Oceano
- 2017 Book: Taiwanese Edition "We have no idea", Cham and Whiteson, Commonwealth Publishing
- 2017 Book: Polish Edition "We have no idea", Cham and Whiteson, Insignis
- 2017 Book: Dutch Edition "We have no idea", Cham and Whiteson, Unieboek
- 2017 Book: UK Edition "We have no idea", Cham and Whiteson, John Murray
- 2017 Book: "We have no idea", Cham and Whiteson, Riverhead ([link](#))
- 2017 Presentation: "We have no idea", Cham and Whiteson, Caltech (May 9), Cellar Door Bookstore (May 11), JPL (May 15), Science on Tap (Portland, May 16), Quimby's Books (Chicago, May 18), Fermilab (Chicago, May 19), Town Hall (Seattle, May 20), Bristol (Jun 2), Hay Book Festival (Wales, Jun 3), Royal Institute of GB (London, Jun 5), How-To Academy (London, Jun 6), Blackwells of Edinburg (Jun 7), Univ of York (Jun 7), Blackwells of Oxford (Jun 8), Google Irvine (Jun 21), Google Mountainview (Jun 23), Politikers Boghallen of Copenhagen (Jul 17), Total Eclipse Festival (Aug 19), Science World of Vancouver BC (Sep 17), Univ of British Columbia (Sep 17), Vancouver Public Library (Sep 18), Brandeis (Sep 19), Boston Univ. (Sep 20), MIT (Sep 20), Northeastern (Sep 21), Harvard CfA (Sep 21), NIST (Sep 22), Dreamworks Animation (Sep 29), Univ. of Pittsburg (Oct 26), Ohio State (Oct 27), Univ of Illinois Chicago (Nov 1), Wisconsin Book Festival (Nov 2)
- 2016 Video: "Gravitational Waves Explained", Cham and Whiteson, ([link](#))
- 2012 Video: "Higgs Boson Explained", Cham and Whiteson, ([link](#))
- 2012 Video: "Extra Dimensions", Cham and Whiteson, ([link](#))
- 2012 Video: "Dark Matter", Cham and Whiteson, ([link](#))

---

## Favorite Cookie Recipe

- 2 cups Rolled Oats
- 1 cup Flour
- 2 tbsp Ground Cinnamon
- $\frac{1}{2}$  tsp Baking Soda
- $\frac{1}{2}$  tsp Salt
- $\frac{1}{2}$  cup Tahini
- 4 tbsp Cold butter
- $1\frac{1}{3}$  cup sugar

1 Large egg  
1 cup Chocolate chips  
Mix Well  
Bake 350°  
Enjoy!

---

## Teaching

Fall 2007-8 Phys 234A: Elementary Particle Physics (Graduate)  
Spring 2007-8 Phys 53: Introduction to C and Numerical Analysis  
Fall 2009-10 Phys 7A: Classical Physics  
Fall 2009-10 Phys 7LA: Classical Physics Lab  
Fall 2010-11 Phys 7C: Classical Physics  
Fall 2010-11 Phys 2: Math Methods for Physics  
Winter 2010-11 Phys 7C: Classical Physics  
Fall 2011-12 Phys 7C: Classical Physics  
Fall 2011-12 Phys 2: Math Methods for Physics  
Winter 2011-12 Phys 2: Math Methods for Physics  
Spring 2011-12 Phys 223: Numerical Methods (Graduate)  
Spring 2012-13 Phys 247: Experimental HEP Techniques (Graduate)  
Fall 2013-14 Phys 7C: Classical Physics  
Winter 2013-14 Phys 7C: Classical Physics  
Spring 2013-14 Phys 247: Experimental HEP Techniques (Graduate)  
Fall 2014-15 Phys 7C: Classical Physics  
Spring 2014-15 Phys 247: Experimental HEP Techniques (Graduate)  
Fall 2015-16 Phys 99: Freshman Seminar  
Winter 2015-16 Phys 61a: Modern Physics  
Spring 2015-16 Phys 61b: Modern Physics  
Fall 2016-17 Phys 99: Freshman Seminar  
Winter 2016-17 Phys 61a: Modern Physics  
Spring 2016-17 Phys 247: Experimental HEP Techniques (Graduate)  
Fall 2017-18 Phys 99: Freshman Seminar  
Winter 2017-18 Phys 61a: Modern Physics  
Spring 2017-18 Phys 61b: Modern Physics  
Fall 2018-19 Phys 99: Freshman Seminar  
Winter 2018-19 Phys 7C: Classical Physics  
Spring 2018-19 Phys 53: Programming  
Winter 2019-20 Phys 7C: Classical Physics  
Spring 2019-20 Phys 53: Programming  
Fall 2020-21 Phys 2: Math Methods for Physics

---

## Postdoctoral Researchers

- 2020- Dr. Jonas Roemer, Supervisor
- 2020- Dr. Aishik Ghosh, Supervisor
- 2019- Dr. Mike Fenton, Supervisor
- 2017-2019 Dr. Johanna Gramling, Co-supervisor
- 2015-2020 Dr. Dan Guest, Supervisor
- 2010-2015 Dr. Ning Zhou, Supervisor
- 2011-2016 Dr. Andrew Nelson, Supervisor
- 2008-2011 Dr. Jianrong Deng
- 2008-2011 Dr. Mario Bondioli

---

## Graduate Students, primary supervisor

- 2006-2011 Robert Porter (graduated)
- 2007-2012 Michael Werth (graduated)
- 2008-2013 Kanishka Rao (graduated)
- 2011-2016 Chase Shimmin (graduated)
- 2012-2017 Meghan Frate (graduated)
- 2013-2018 Kevin Bauer (graduated)
- 2017-2020 Eric Albin (graduated)
- 2016- Yvonne Ng
- 2016- Taylor Faucett
- 2016- Jeff Swaney
- 2017- Alexis Romero
- 2017- Jacob Hollingsworth
- 2018- Jessica Howard
- 2018- Edmund Witkowski
- 2020- Delaney Farrel (SDSU joint program)

---

## Graduate Students, other

- 2007-2012 Brokk Toggerson, Doctoral Committee
- 2008-2013 Stephen Farrell, Doctoral Committee
- 2009-2013 Matt Relich, Doctoral Committee
- 2012-2016 Peter Sadowski, Doctoral Committee
- 2021 Dylan Slack, Advancement Committee
- 2019 Alex Armstrong, Advancement Committee
- 2018 Aaron Soffa, Advancement Committee
- 2018 Cory Scott, Advancement Committee
- 2017 Julian Collado, Advancement Committee
- 2017 Daniel Antrim, Advancement Committee
- 2016 Chris Persichilli, Advancement Committee

---

## Undergraduate Students

- 2021 Udayan Mandal, Eric Huang, Rohan Nambimbardon, Sid Solaiyappan, Adam Porter
- 2020- Jesus Ramirez
- 2018- Tony Tong
- 2018 Ofek Gila, Yarrin Heffes, James Yamada, Kyongseop Yoon, Bencheng Li, Wenjie Huang, Kabir Patel, Kyle Brodie
- 2017-18 Corey Beard
- 2016-18 Derek Soeder
- 2015-18 Edison Weik, Luis Zagazeta
- 2014-18 Zepyour Khechadorian
- 2015-17 Edward Goul
- 2015-16 Thomas Schmidt
- 2014-15 Kyle Brodie
- 2014-16 Marcelo Autran
- 2014-15 Jamison Searles
- 2012-13 Michael Yen, Mazin Khader, Alan Truong
- 2012-14 Adam Johnstone
- 2011-13 Jared Vasquez
- 2011-12 Johnny Ho
- 2011 Matt Kelly, John Naviaux
- 2010-11 Reza AmirArjomand
- 2008-10 Matthew Hickman, Eddie Quinlan, Max Clark

---

## Conference Organization

- Mar 2017 DM@LHC
- Feb 2015 Aspen Winter Conf.
- Aug 2012 SUSY2012, convenor Alternate/Exotics session
- Feb 2012 Aspen Winter Conf.

---

## Grants

- 2020-2022 Co-PI, DOE Office of Science, \$797k annually among 3 PIs
- 2016 PI, Jenkins Family Foundation, \$100k
- 2017-2022 Co-PI, NSF NRT for Machine Learning, \$3M total
- 2016-2019 Co-PI, DOE Office of Science, \$897k annually among 3 PIs
- 2012-2015 Co-PI, DOE Office of Science, \$773k annually among 3 PIs
- 2012 PI, UCI Research Council, \$3k
- 2007-2012 PI, DOE Outstanding Junior Investigator, \$82k annually
- 2007-2012 Co-PI, DOE Office of Science, \$588k annually among 3 PIs

2010-2011 PI, Alfred P. Sloan Foundation, \$25k annually  
2008 PI, UCI Research Council, \$7k

---

## References

Paul Tipton, Prof. of Physics, Yale University, paul.tipton@yale.edu  
John Conway, Prof. of Physics, UC Davis, conway@physics.ucdavis.edu  
Marumi Kado, LAL-Orsay, kado@lal.in2p3.fr  
Stephane Willocq, Prof. of Physics, Amherst, stephane.willocq@cern.ch  
Andrew Lankford, Prof. of Physics, UC Irvine, ajlankfo@uci.edu

---

## Scientific Presentations

Mar 2021 LHCb StatML workshop  
Feb 2021 Invited Speaker, AAAS  
Feb 2021 Invited Speaker, ECU 2021  
Feb 2021 CERN IML workshop  
Nov 2020 Seminar, LLNL  
Aug 2020 Invited Speaker, DANCE/ML  
Feb 2020 Colloquium, UCSD Physics  
Jan 2020 Invited Speaker, NETA 2020  
Oct 2019 Invited Speaker, ML-PS Nexus  
Sep 2019 Seminar, LBNL  
Sep 2019 Invited Speaker, PACIFIC 2019  
July 2019 Seminar, Aspen Center for Physics  
Sep 2018 Maxwell Lecture, King's College London  
Jun 2018 Lectures, Theory Advanced Study Institute, UC Boulder  
Apr 2018 Panel, Aspen Winter Conference  
Feb 2018 Seminar, Rice University  
Feb 2018 Seminar, Texas A&M University  
Feb 2018 Colloquium, Texas A&M University  
Feb 2018 Seminar, UT Austin  
Jan 2018 Seminar, Univ of Virginia  
Jan 2018 Seminar, Duke  
Nov 2017 Colloquium, University of Illinois, Chicago  
Jun 2017 Seminar, Oxford Physics  
Jun 2017 Seminar, Imperial College London  
May 2017 Colloquium, UC Riverside  
Apr 2017 Colloquium, NYU  
Oct 2016 Colloquium, Univ of Nijmegen  
Jul 2016 Lecturer, iSTEP Physics Summer School, Beijing  
May 2016 Invited Speaker, KITP UCSB

Apr 2016 Colloquium, CP3, University of South Denmark  
 Mar 2016 Colloquium, Univ. of Oregon  
 Mar 2016 Seminar, Univ. of Oregon  
 Mar 2016 Seminar, UC Santa Barbara  
 Jan 2016 Colloquium, The Ohio State University  
 Dec 2015 Invited Speaker, NIPS 2014  
 Oct 2015 Colloquium, UC Santa Cruz  
 Oct 2015 Colloquium, UC Irvine  
 Aug 2015 Public lecture, Aspen Center for Physics  
 Jul 2015 Wine and Cheese, Fermilab  
 Jul 2015 Seminar, LHC Physics Center, FermiLab  
 Mar 2015 Colloquium, Rutgers  
 Mar 2015 Seminar, NYU  
 Mar 2015 Seminar, Princeton  
 Mar 2015 Seminar, Brookhaven  
 Mar 2015 Seminar, Columbia Nevis Labs  
 Dec 2014 Invited Speaker, NIPS 2014  
 Oct 2014 Invited Speaker, UCI Datascience Kick-off Symposium  
 Oct 2014 Colloquium, UC Riverside  
 Sep 2014 Colloquium, San Diego State University  
 Aug 2014 Invited Plenary Speaker, Next steps in the Energy Frontier, FNAL (declined)  
 Aug 2014 Invited Plenary Speaker, Nature Guiding Theory Workso, FNAL  
 Aug 2014 Invited Lecturer (Statistics), FNAL-CERN Hadron Collider Physics Summer School  
 Aug 2014 Invited Lecturer (Dark Matter), SLAC Summer Institute  
 Aug 2014 Invited Plenary Speaker, US ATLAS Physics Workshop, Univ. Washington (declined)  
 May 2014 Invited Plenary Speaker, Debates on the Nature of Dark Matter, Harvard  
 May 2014 Seminar, UC Davis  
 Apr 2014 Seminar, UC Irvine  
 Dec 2013 UBC theory workshop, invited  
 June 2013 Snowmass Energy Frontier Workshop, Univ of Washington  
 May 2013 KITP dark matter workshop, UC Santa Barbara  
 May 2013 KITP dark matter conference, UC Santa Barbara  
 Apr 2013 Invited Plenary Speaker, INPAC-MPRI  
 Apr 2013 Seminar, UCLA  
 Apr 2013 Seminar, UC Irvine  
 Mar 2013 Seminar, Univ of Zurich  
 Feb 2013 Seminar, FNAL  
 Jan 2013 Aspen Winter Conference, Invited Plenary Speaker (Fermi)  
 Jan 2013 Aspen Winter Conference, Invited Plenary Speaker (ATLAS)  
 Jan 2013 Theory Seminar, SLAC  
 Jan 2013 Keynote Speaker, Partners in Science Conference, San Diego

3168 Reines Hall – Department of Physics, UC Irvine, Irvine, CA

☎ 949 824-2148 • ✉ [daniel@uci.edu](mailto:daniel@uci.edu) • <http://amanda.uci.edu/~daniel>

8/16



Jan 2013 Seminar, UC Santa Cruz  
 Jan 2013 DaMaSC, Caltech, Invited Plenary Speaker  
 Jan 2013 DaMaSC, Caltech, Invited Panel Member  
 Dec 2012 Seminar, UC San Diego  
 Nov 2012 Seminar, Caltech  
 Nov 2012 Artificial Intelligence/Machine Learning Seminar, UC Irvine  
 Sep 2012 Invited Panel Member, SAMSI Big Data meeting, Research Triangle Park, NC  
 Aug 2012 Aspen, invited seminar  
 Jul 2012 IDM conference, invited plenary presentation  
 May 2012 Seminar, Caltech  
 May 2012 Public Talk, Sigma Xi  
 Feb 2012 Seminar, UC Davis  
 Dec 2011 Heidelberg NP, invited plenary presentation  
 Dec 2011 NIPS 2011, invited plenary presentation  
 Oct 2011 Seminar, Univ. of Michigan  
 Oct 2011 Seminar, UC Irvine  
 Sep 2011 BLV conference, Gatlinberg TN, invited plenary presentation  
 Jul 2011 Colloquium, Aspen Center for Physics, invited  
 Apr 2011 Public Lecture, MIT Alumni of SoCal  
 Apr 2011 SUSY Recast Workshop UC Davis, invited presentation  
 Mar 2011 Seminar, Univ. of Pennsylvania  
 Mar 2011 Seminar, Princeton University  
 Dec 2010 West-Coast Theory Meeting, UC Irvine, invited presentation  
 Nov 2010 Colloquium, CSU Long Beach  
 Oct 2010 Colloquium, UC Irvine  
 Oct 2010 Public Lecture, Super-sized Science Initiative  
 Sep 2010 Seminar, ATLAS West-coast Forum, SLAC  
 Aug 2010 ICHEP conference, invited parallel presentation, *declined*  
 Jun 2010 Terascale workshop, University of Washington, invited plenary presentation  
 Jun 2010 PLANCK conference, invited plenary presentation  
 May 2010 BNL Forum, invited parallel presentation, session chair  
 Apr 2010 MC4BSM conference, Copenhagen, invited plenary presentation  
 Mar 2010 HEP Seminar, LAL Orsay  
 Mar 2010 Seminar, ATLAS West-coast Forum, SLAC  
 Feb 2010 HEP seminar, Rutherford Appleton Labs  
 Feb 2010 HEP seminar, Oxford University  
 Jan 2010 Beyond the 3rd Generation, NTU Taiwan, invited plenary presentation (CDF)  
 Jan 2010 Beyond the 3rd Generation, NTU Taiwan, invited plenary presentation (ATLAS)  
 Nov 2009 Top At Tevatron Workshop, UC Davis, invited plenary presentation  
 Nov 2009 HEP seminar, UC Davis  
 Nov 2009 HEP seminar, CalTech

Oct 2009 HEP seminar, UC Irvine  
Mar 2009 CalTech Multivariate Workshop, invited plenary presentation  
Feb 2009 Heidelberg Workshop, invited plenary presentation  
Jun 2008 LHCb Collab Meeting, Invited plenary presentation  
May 2008 HEP seminar, UCLA  
Apr 2008 HEP seminar, Rice U.  
Feb 2008 La Thuile conference, invited plenary presentation  
Sep 2007 HEP seminar, UC Irvine  
Mar 2006 Moriond-QCD conference, invited plenary presentation  
Oct 2005 HEP seminar, CERN  
Aug 2005 FNAL Wine and Cheese  
Sep 2005 HEP Seminar, U. of Pennsylvania  
Oct 2004 IEEE, Rome, invited parallel presentation  
Nov 2003 HEP Seminar, U. of Chicago  
Oct 2003 HEP Seminar, Purdue Univ.  
Oct 2003 HEP Seminar, U. of Pennsylvania  
May 2003 DPF conference, Philadelphia, invited parallel presentation  
May 2003 APS conference, Philadelphia, parallel presentation  
May 2002 APS conference, Albuquerque, parallel presentation  
Jul 2001 Snowmass conference, parallel presentation

## Publications

This is a partial list. For papers in large experimental collaborations, I only include those where I made a significant contribution.

A complete list of publications is available [here](#)

### Journal Articles (Experimental Collaborations)

- [1] V.M. Abazov et al. Measurement of the  $t\bar{t}$  production cross section in  $p\bar{p}$  collisions at  $\sqrt{s} = 1.96$ -TeV in dilepton final states. *Phys.Lett.*, B626:55–64, 2005.
- [2] K. Anikeev et al. CDF level 2 trigger upgrade. *IEEE Trans. Nucl. Sci.*, 53:653–658, 2006.
- [3] A. Abulencia et al. Top quark mass measurement from dilepton events at CDF II. *Phys.Rev.Lett.*, 96:152002, 2006.
- [4] A. Abulencia et al. Top quark mass measurement from dilepton events at CDF II with the matrix-element method. *Phys.Rev.*, D74:032009, 2006.
- [5] A. Abulencia et al. Precision measurement of the top quark mass from dilepton events at CDF II. *Phys.Rev.*, D75:031105, 2007.
- [6] T. Aaltonen et al. Search for Maximal Flavor Violating Scalars in Same-Charge Lepton Pairs in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.96$ -TeV. *Phys.Rev.Lett.*, 102:041801, 2009.
- [7] T. Aaltonen et al. A Search for the Higgs Boson Produced in Association with  $Z \rightarrow \ell^+\ell^-$  Using the Matrix Element Method at CDF II. *Phys.Rev.*, D80:071101, 2009.
- [8] T. Aaltonen et al. A Search for the Associated Production of the Standard-Model Higgs Boson in the All-Hadronic Channel. *Phys.Rev.Lett.*, 103:221801, 2009.
- [9] T. Aaltonen et al. Measurement of the top quark mass with dilepton events selected using neuroevolution at CDF. *Phys. Rev. Lett.*, 102:152001, 2009.
- [10] T. Aaltonen et al. Search for New Bottomlike Quark Pair Decays  $Q Q\text{-bar} \rightarrow (t W\text{-}) (t\text{-bar} W\text{+})$  in Same-Charge Dilepton Events. *Phys.Rev.Lett.*, 104:091801, 2010.
- [11] T. Aaltonen et al. Search for heavy bottom-like quarks decaying to an electron or muon and jets in  $p\bar{p}$  collisions at  $\sqrt{s} = 1.96$  TeV. *Phys.Rev.Lett.*, 106:141803, 2011.
- [12] T. Aaltonen et al. Search for High Mass Resonances Decaying to Muon Pairs in  $\sqrt{s} = 1.96$  TeV  $p\bar{p}$  Collisions. *Phys.Rev.Lett.*, 106:121801, 2011.
- [13] T. Aaltonen et al. Search for new physics in high  $p_T$  like-sign dilepton events at CDF II. *Phys.Rev.Lett.*, 107:181801, 2011.
- [14] T. Aaltonen et al. Search for Production of Heavy Particles Decaying to Top Quarks and Invisible Particles in  $p\bar{p}$  collisions at  $\sqrt{s} = 1.96$  TeV. *Phys.Rev.Lett.*, 106:191801, 2011.
- [15] Georges Aad et al. Measurement of the top quark-pair production cross section with ATLAS in pp collisions at  $\sqrt{s} = 7$  TeV. *Eur.Phys.J.*, C71:1577, 2011.
- [16] Georges Aad et al. Inclusive search for same-sign dilepton signatures in pp collisions at  $\sqrt{s} = 7$  TeV with the ATLAS detector. *JHEP*, 1110:107, 2011.
- [17] T. Aaltonen et al. Search for new phenomena in events with two  $Z$  bosons and missing transverse momentum in  $p\bar{p}$  collisions at  $\sqrt{s} = 1.96$  TeV. *Phys.Rev.*, D85:011104, 2012.
- [18] Georges Aad et al. Search for pair-produced heavy quarks decaying to  $Wq$  in the two-lepton channel at  $\sqrt{s} = 7$  TeV with the ATLAS detector. *Phys.Rev.*, D86:012007, 2012.
- [19] Georges Aad et al. Search for same-sign top-quark production and fourth-generation down-type quarks in pp collisions at  $\sqrt{s} = 7$  TeV with the ATLAS detector. *JHEP*, 1204:069, 2012.

- [20] Georges Aad et al. Search for down-type fourth generation quarks with the ATLAS detector in events with one lepton and hadronically decaying  $W$  bosons. *Phys.Rev.Lett.*, 109:032001, 2012.
- [21] Georges Aad et al. Search for new particles decaying to  $ZZ$  using final states with leptons and jets with the ATLAS detector in  $\sqrt{s} = 7$  TeV proton-proton collisions. *Phys.Lett.*, B712:331–350, 2012.
- [22] T. Aaltonen et al. Search for a heavy particle decaying to a top quark and a light quark in  $p\bar{p}$  collisions at  $\sqrt{s} = 1.96$  TeV. *Phys.Rev.Lett.*, 108:211805, 2012.
- [23] Georges Aad et al. Search for resonant top plus jet production in  $t\bar{t} + \text{jets}$  events with the ATLAS detector in  $pp$  collisions at  $\sqrt{s} = 7$  TeV. *Phys.Rev.*, D86:091103, 2012.
- [24] T. Aaltonen et al. Search for a heavy vector boson decaying to two gluons in  $p\bar{p}$  collisions at  $\sqrt{s} = 1.96$  TeV. *Phys.Rev.*, D86:112002, 2012.
- [25] Georges Aad et al. Search for dark matter candidates and large extra dimensions in events with a photon and missing transverse momentum in  $pp$  collision data at  $\sqrt{s} = 7$  TeV with the ATLAS detector. *Phys.Rev.Lett.*, 110:011802, 2013.
- [26] Georges Aad et al. Measurement of the  $ZZ$  production cross section and limits on anomalous neutral triple gauge couplings in proton-proton collisions at  $\sqrt{s} = 7$  TeV with the ATLAS detector. *Phys.Rev.Lett.*, 108:041804, 2012.
- [27] Georges Aad et al. Measurement of  $ZZ$  production in  $pp$  collisions at  $\sqrt{s} = 7$  TeV and limits on anomalous  $ZZZ$  and  $ZZ\gamma$  couplings with the ATLAS detector. *JHEP*, 1303:128, 2013.
- [28] T. Aaltonen et al. Search for a two-Higgs-boson doublet using a simplified model in  $p\bar{p}$  collisions at  $\sqrt{s} = 1.96$  TeV. *Phys.Rev.Lett.*, 110(12):121801, 2013.
- [29] T. Aaltonen et al. Search for Pair Production of Strongly Interacting Particles Decaying to Pairs of Jets in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.96$  TeV. *Phys.Rev.Lett.*, 111(3):031802, 2013.
- [30] Georges Aad et al. Search for dark matter in events with a hadronically decaying  $W$  or  $Z$  boson and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector. *Phys.Rev.Lett.*, 112(4):041802, 2014.
- [31] Georges Aad et al. Search for a Multi-Higgs Boson Cascade in  $WWbb$  events with the ATLAS detector in  $pp$  collisions at  $\sqrt{s} = 8$  TeV. *Phys.Rev.*, D89:032002, 2014.
- [32] Georges Aad et al. Search for Invisible Decays of a Higgs Boson Produced in Association with a  $Z$  Boson in ATLAS. *Phys.Rev.Lett.*, 112:201802, 2014.
- [33] Georges Aad et al. Search for dark matter in events with a  $Z$  boson and missing transverse momentum in  $pp$  collisions at  $\sqrt{s}=8$  TeV with the ATLAS detector. *Phys.Rev.*, D90:012004, 2014.
- [34] Georges Aad et al. Search for new particles in events with one lepton and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector. 2014.
- [35] Georges Aad et al. Search for new phenomena in events with a photon and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector. *Phys. Rev.*, D91(1):012008, 2015. [Erratum: *Phys. Rev.* D92,no.5,059903(2015)].
- [36] Georges Aad et al. Search for New Phenomena in Dijet Angular Distributions in Proton-Proton Collisions at  $\sqrt{s} = 8$  TeV Measured with the ATLAS Detector. *Phys. Rev. Lett.*, 114(22):221802, 2015.
- [37] Georges Aad et al. Search for Dark Matter in Events with Missing Transverse Momentum and a Higgs Boson Decaying to Two Photons in  $pp$  Collisions at  $\sqrt{s} = 8$  TeV with the ATLAS Detector. *Phys. Rev. Lett.*, 115(13):131801, 2015.
- [38] Georges Aad et al. Search for new phenomena in dijet mass and angular distributions from  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector. *Phys. Lett.*, B754:302–322, 2016.

- [39] Morad Aaboud et al. Search for dark matter produced in association with a hadronically decaying vector boson in  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector. *Phys. Lett.*, B763:251–268, 2016.
- [40] M. Abolins et al. The ATLAS Data Acquisition and High Level Trigger system. *JINST*, 11(06):P06008, 2016.
- [41] Morad Aaboud et al. Search for new phenomena in dijet events using 37 fb<sup>-1</sup> of  $pp$  collision data collected at  $\sqrt{s} = 13$  TeV with the ATLAS detector. 2017.
- [42] M. Aaboud et al. Jet energy scale measurements and their systematic uncertainties in proton-proton collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector. *Phys. Rev.*, D96(7):072002, 2017.
- [43] Morad Aaboud et al. Search for new phenomena in a lepton plus high jet multiplicity final state with the ATLAS experiment using  $\sqrt{s} = 13$  TeV proton-proton collision data. *JHEP*, 09:088, 2017.
- [44] Morad Aaboud et al. Search for Dark Matter Produced in Association with a Higgs Boson Decaying to  $b\bar{b}$  using 36 fb<sup>-1</sup> of  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS Detector. *Phys. Rev. Lett.*, 119(18):181804, 2017.
- [45] Morad Aaboud et al. Search for light resonances decaying to boosted quark pairs and produced in association with a photon or a jet in proton-proton collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector. 2018.
- [46] Morad Aaboud et al. Search for dark matter in events with a hadronically decaying vector boson and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector. 2018.
- [47] Morad Aaboud et al. Search for low-mass resonances decaying into two jets and produced in association with a photon using  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector. *Phys. Lett. B*, 795:56–75, 2019.
- [48] Morad Aaboud et al. Constraints on mediator-based dark matter and scalar dark energy models using  $\sqrt{s} = 13$  TeV  $pp$  collision data collected by the ATLAS detector. *JHEP*, 05:142, 2019.
- [49] Georges Aad et al. Search for high-mass dilepton resonances using 139 fb<sup>-1</sup> of  $pp$  collision data collected at  $\sqrt{s} = 13$  TeV with the ATLAS detector. *Phys. Lett. B*, 796:68–87, 2019.
- [50] Georges Aad et al. Identification of boosted Higgs bosons decaying into  $b$ -quark pairs with the ATLAS detector at 13 TeV. *Eur. Phys. J. C*, 79(10):836, 2019.
- [51] Georges Aad et al. Search for new resonances in mass distributions of jet pairs using 139 fb<sup>-1</sup> of  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector. *JHEP*, 03:145, 2020.

#### Journal Articles (Phenomenology)

- [52] Christian J. Flacco, Daniel Whiteson, and Matthew Kelly. Fourth generation quark mass limits in CKM-element space. *Phys.Rev.*, D83:114048, 2011.
- [53] Shaouly Bar-Shalom, Arvind Rajaraman, Daniel Whiteson, and Felix Yu. Collider Signals of Maximal Flavor Violation: Same-Sign Leptons from Same-Sign Tops at the Tevatron. *Phys.Rev.*, D78:033003, 2008.
- [54] Arvind Rajaraman and Daniel Whiteson. Discovering Majorana neutrinos produced via a Z boson at hadron colliders. *Phys.Rev.*, D81:071301, 2010.
- [55] Christian J. Flacco, Daniel Whiteson, Tim M.P. Tait, and Shaouly Bar-Shalom. Direct Mass Limits for Chiral Fourth-Generation Quarks in All Mixing Scenarios. *Phys.Rev.Lett.*, 105:111801, 2010.
- [56] Jared A. Evans, Ben Kilminster, Markus Luty, Daniel Whiteson, Ben Kilminster, et al. Searching For Resonances inside Top-like Events. *Phys.Rev.*, D85:055009, 2012.

- [57] Johan Alwall, Mazin Khader, Arvind Rajaraman, Daniel Whiteson, and Michael Yen. Searching for  $Z'$  bosons decaying to gluons. *Phys.Rev.*, D85:115011, 2012.
- [58] Ning Zhou, Daniel Whiteson, and Tim M.P. Tait. Limits on Four-Top Production from the ATLAS Same-sign Top-quark Search. *Phys.Rev.*, D85:091501, 2012.
- [59] Kanishka Rao and Daniel Whiteson. Triangulating an exotic T quark. *Phys.Rev.*, D86:015008, 2012.
- [60] Linda M. Carpenter, Andrew Nelson, Chase Shimmin, Tim M.P. Tait, and Daniel Whiteson. Collider searches for dark matter in events with a Z boson and missing energy. *Phys.Rev.*, D87(7):074005, 2013.
- [61] Ning Zhou, David Berge, and Daniel Whiteson. Mono-everything: combined limits on dark matter production at colliders from multiple final states. *Phys.Rev.*, D87(9):095013, 2013.
- [62] Ning Zhou, David Berge, LianTao Wang, Daniel Whiteson, and Tim Tait. Sensitivity of future collider facilities to WIMP pair production via effective operators and light mediators. 2013.
- [63] Leonard Apanasevich, Suneet Upadhyay, Nikos Varelas, Daniel Whiteson, and Felix Yu. Sensitivity of potential future  $pp$  colliders to quark compositeness. 2013.
- [64] Andy Nelson, Linda M. Carpenter, Randel Cotta, Adam Johnstone, and Daniel Whiteson. Confronting the Fermi Line with LHC data: an Effective Theory of Dark Matter Interaction with Photons. *Phys.Rev.*, D89:056011, 2014.
- [65] Linda Carpenter, Anthony DiFranzo, Michael Mulhearn, Chase Shimmin, Sean Tulin, et al. Mono-Higgs: a new collider probe of dark matter. *Phys.Rev.*, D89:075017, 2014.
- [66] Mohammad Abdullah, Eric Albin, Anthony DiFranzo, Meghan Frate, Craig Pitcher, et al. Systematically Searching for New Resonances at the Energy Frontier using Topological Models. *Phys.Rev.*, D89:095002, 2014.
- [67] Nicolas Lopez, Linda M. Carpenter, Randel Cotta, Meghan Frate, Ning Zhou, et al. Collider Bounds on Indirect Dark Matter Searches: The  $WW$  Final State. *Phys.Rev.*, D89:115013, 2014.
- [68] Ning Zhou, Zepoor Khechadorian, Daniel Whiteson, and Tim Tait. Bounds on Invisible Higgs boson Decays from  $t\bar{t}H$  Production. 2014.
- [69] Marcelo Autran, Kevin Bauer, Tongyan Lin, and Daniel Whiteson. Searches for dark matter in events with a resonance and missing transverse energy. *Phys. Rev.*, D92(3):035007, 2015.
- [70] A. Nelson, P. Tanedo, and D. Whiteson. Limiting SUSY compressed spectra scenarios. *Phys. Rev.*, D93(11):115029, 2016.
- [71] Chase Shimmin and Daniel Whiteson. Boosting low-mass hadronic resonances. *Phys. Rev.*, D94(5):055001, 2016.
- [72] Nathaniel Craig, Patrick Draper, Kyoungchul Kong, Yvonne Ng, and Daniel Whiteson. The unexplored landscape of two-body resonances. 2016.
- [73] Mohammed Abdullah, Kevin Bauer, Luis Gutierrez, John Sandy, and Daniel Whiteson. Searching for spin-3/2 leptons. *Phys. Rev.*, D95(3):035008, 2017.
- [74] Jeong Han Kim, Kyoungchul Kong, Benjamin Nachman, and Daniel Whiteson. The motivation and status of two-body resonance decays after the LHC Run 2 and beyond. *JHEP*, 04:030, 2020.

#### Journal Articles (Astro)

- [75] Arvind Rajaraman, Tim M.P. Tait, and Daniel Whiteson. Two Lines or Not Two Lines? That is the Question of Gamma Ray Spectra. *JCAP*, *accepted*, 2012.
- [76] Daniel Whiteson. Disentangling Instrumental Features of the 130 GeV Fermi Line. *JCAP*, 1211:008, 2012.

3168 Reines Hall – Department of Physics, UC Irvine, Irvine, CA

☎ 949 824-2148 • ✉ [daniel@uci.edu](mailto:daniel@uci.edu) • <http://amanda.uci.edu/~daniel>

14/16

- [77] Kanishka Rao and Daniel Whiteson. Where are the Fermi Lines Coming From? *JCAP*, 1303:035, 2013.
- [78] Daniel Whiteson. Searching for Spurious Solar and Sky Lines in the Fermi-LAT Spectrum. *Phys.Rev.*, D88(2):023530, 2013.
- [79] Daniel Whiteson, Michael Mulhearn, Chase Shimmin, Kyle Cranmer, Kyle Brodie, and Dustin Burns. Searching for ultra-high energy cosmic rays with smartphones. *Astropart. Phys.*, 79:1–9, 2016.

#### Journal Articles (Machine Learning)

- [80] D Whiteson and N.A Naumann. Support vector regression as a signal discriminator in high energy physics. *Neurocomputing*, 55:251–264, 2003.
- [81] S. Whiteson and D. Whiteson. Stochastic optimization for collision selection in high energy physics. *Association for the Advancement of Artificial Intelligence*, 292, 2007.
- [82] S. Whiteson and D. Whiteson. Machine learning for event selection in high energy physics. *Engineering Appl. of Artificial Int.*, 2008.
- [83] Pierre Baldi, Peter Sadowski, and Daniel Whiteson. Searching for Exotic Particles in High-Energy Physics with Deep Learning. *Nature Communications*, 2014.
- [84] Pierre Baldi, Peter Sadowski, and Daniel Whiteson. Enhanced Higgs Boson to  $\tau^+\tau^-$  Search with Deep Learning. *Phys.Rev.Lett.*, 114(11):111801, 2015.
- [85] Pierre Baldi, Kyle Cranmer, Taylor Faucett, Peter Sadowski, and Daniel Whiteson. Parameterized neural networks for high-energy physics. *Eur. Phys. J.*, C76(5):235, 2016.
- [86] Pierre Baldi, Kevin Bauer, Clara Eng, Peter Sadowski, and Daniel Whiteson. Jet Substructure Classification in High-Energy Physics with Deep Neural Networks. *Phys. Rev.*, D93(9):094034, 2016.
- [87] Daniel Guest, Julian Collado, Pierre Baldi, Shih-Chieh Hsu, Gregor Urban, and Daniel Whiteson. Jet Flavor Classification in High-Energy Physics with Deep Neural Networks. *Phys. Rev.*, D94(11):112002, 2016.
- [88] Chase Shimmin, Peter Sadowski, Pierre Baldi, Edison Weik, Daniel Whiteson, Edward Goul, and Andreas Sjøgaard. Decorrelated Jet Substructure Tagging using Adversarial Neural Networks. *Phys. Rev.*, D96(7):074034, 2017.
- [89] Meghan Frate, Kyle Cranmer, Saarik Kalia, Alexander Vandenberg-Rodes, and Daniel Whiteson. Modeling Smooth Backgrounds and Generic Localized Signals with Gaussian Processes. 2017.
- [90] Dan Guest, Kyle Cranmer, and Daniel Whiteson. Deep Learning and its Application to LHC Physics. *Annu. Rev. Nucl. Part. Sci.*, 68, 2018.
- [91] Yadong Lu, Julian Collado, Daniel Whiteson, and Pierre Baldi. Sparse autoregressive models for scalable generation of sparse images in particle physics. *Phys. Rev. D*, 103(3):036012, 2021.
- [92] Taylor Faucett, Jesse Thaler, and Daniel Whiteson. Mapping Machine-Learned Physics into a Human-Readable Space. *Phys. Rev. D*, 103(3):036020, 2021.
- [93] Julian Collado, Jessica N. Howard, Taylor Faucett, Tony Tong, Pierre Baldi, and Daniel Whiteson. Learning to identify electrons. *Phys. Rev. D*, 103(11):116028, 2021.

#### Dissertations

- [94] Daniel Whiteson. Standard Model and Exotic Physics with Electrons and Muons at D0. 2003. UC Berkeley.
- [95] Robert Porter. Search for New Physics in Same-sign dileptons at CDF. 2011. UC Irvine (advisor: Whiteson).

- [96] Michael Werth. Search for Heavy Quarks decaying to  $Wq$  at ATLAS. 2012. UC Irvine (advisor: Whiteson).
- [97] Kanishka Rao. Search for New Physics in Top Events at ATLAS. 2013. UC Irvine (advisor: Whiteson).
- [98] Chase Shimmin. LHC Searches for Dark Matter and Exotic Resonances. 2015. UC Irvine (advisor: Whiteson).
- [99] Meghan Frate. The Search for New Resonant Phenomena using Dijet Events at the ATLAS Detector. 2017. UC Irvine (advisor: Whiteson).
- [100] Kevin Bauer. Developing New Ideas with ATLAS: Dark Matter Searches, Detector Upgrades, and Phenomenology. 2019. UC Irvine (advisor: Whiteson).