

Pavel M. Nadolsky

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Appointments

- **Southern Methodist University, Department of Physics:** Associate Professor in theoretical physics, 09/2013-present; Assistant Professor, 2008-08/2013

Education and training

- **Michigan State University, Department of Physics & Astronomy:** Postdoctoral researcher in High Energy Physics Theory group, 2007-2008
- **Argonne National Laboratory, High Energy Physics Division:** Postdoctoral researcher in High Energy Physics Theory group, 2004-2007
- **Southern Methodist University, Department of Physics:** Postdoc, 2001-2004
- **Michigan State University, Department of Physics & Astronomy:** Ph. D. in Physics, 1996-2001
- **Institute for High Energy Physics, Russia:** Candidate of Physical and Mathematical Sciences, 1992-1996
- **Lomonosov Moscow State University (Russia), Department of Physics:** M. Sc. in Physics; diploma with honors, 1986-1992

Research interests

I work on theory of elementary particles at hadron colliders, which explores physical objects at tiniest distances accessible to modern science. We study basic forces existing in nature and microscopic events that drive the evolution of the Universe since its very beginning. My recent efforts focus on observations of fundamental particle states at the Large Hadron Collider near Geneva, Switzerland. The LHC's main objective is to identify the way by which elementary particles acquire their mass that stabilizes the microscopic matter and enables our world's existence. The research at the LHC resulted in a discovery of the Higgs boson, a particle that carries the force responsible for the particle mass generation. I develop theoretical models predicting how particles are produced through strong and electroweak interactions. Without such models, observations of new effects at the LHC will be difficult if ever possible. My research combines quantum field theory, computer simulations, and multivariate statistical analysis of diverse experimental data. I participate in the development of widely used parametrizations of parton distribution functions as a member of the CTEQ collaboration.

My publications

- The latest list of my publications, including citations, can be viewed in the INSPIRE database (http://bit.ly/nadolsky_inspire) and on Google Scholar (http://bit.ly/nadolsky_scholar). Publication record on INSPIRE, October 2019: 53 journal papers, 15550 citations, $h_{HEP} = 32$ (journal publications only), 58 conference proceedings and reports.

Professional activities and service

- **Co-spokesperson** of Coordinated Theoretical-Experimental project on Quantum chromodynamics (CTEQ, <http://www.cteq.org>)
- Director of Graduate Studies, Department of Physics, SMU, 09/2017-07/2019
- SMU Faculty Senate member, 09/2016-08/2017
- **Convener**, the Integrated Physics Analysis, PROSA collaboration, prosa.desy.de (until 2017)
- **Lecturer**, CTEQ summer school on QCD Analysis and Phenomenology, Madison, WI, 2007, 2009, 2011, 2014, 2017-2019; TMD Collaboration School, 2017; HUGS school, 2019
- **Convener**, XXI International Workshop on Deep Inelastic Scattering and related subjects, Marseille, France, 2013; QCD @ LHC workshops, 2012, 2014, 2019; CTEQ-Fermilab LPC workshop, 2011 and 2013
- Organizing committee, CTEQ summer schools, 2016-present
- Local organizing committee, Light-cone QCD 2011 workshop, SMU, May 2011
- Local organizing committee, XXIII Workshop on Deep Inelastic Scattering and related subjects, SMU, Dallas, April 2015
- Organizing committee, Joint CTEQ meeting and 7th workshop on "Physics Opportunities at an Electron-Ion Collider", Philadelphia, PA, November 2016
- **Referee** for APS physics journals, Advances in High Energy Physics, Nuclear Physics B, Physics Letters B
- Member of the American Physical Society

Grants, contracts, sponsored research

- Principal Investigator, "Research in High-Energy Physics at Southern Methodist University", co-PI: Fredrick Olness, US Department of Energy, 387,000 USD, April 2019 – March 2022

- Principal Investigator, "Research in High-Energy Physics at Southern Methodist University", grant DE-SC0010129 (co-PI: Fredrick Olness), US Department of Energy, 676,000 USD, April 2016 – March 2019
- Principal Investigator, "Studies of QCD structure in high-energy collisions", grant DE-SC0013681, US Department of Energy, 145,000 USD, April 2015 – March 2016
- Principal Investigator, "Integrated analysis of particle interactions at hadron colliders", Early Career Research Award DE-SC000387, US Department of Energy, 750,000 USD, April 2010 – April 2015
- DOE supplemental award for a Ph. D. student, 16,000 USD, 2017
- Dean's Award for a Ph. D. student, 4,600 USD, Summer 2019
- Dean's Safety Net Support for a Ph. D. student, 6,000 USD, Summer 2019
- Investigator, LHC Theory Initiative Computing and Travel Fellowship Award, Sponsored by US Department of Energy, 15,000 USD, December 2007 – December 2009 (<http://bit.ly/NSwG1>)
- Instructional Technology Grant, sponsored by SMU Office of Provost, 4,500 USD, 2010
- Senior Engaged Learning Fellowship, 2018-2019; Hamilton Scholarship for undergraduate research, 2012, 2013, 2017

Recent public presentations

Invited lectures, seminars and colloquia

1. *Heavy quarks*– CTEQ Summer School, University of Pittsburgh, Pittsburgh, PA, 2019-07-23
2. *Parton distribution functions (PDFs) in the EIC era*, a 5-hour lecture at the HUGS'2019 Summer School, Jefferson Laboratory, June 2019
3. *Precise analysis of hadron structure for the LHC era* – DAMTP, University of Cambridge, UK, February 2019
4. *Precise analysis of hadron structure for the LHC era* – University of Tübingen, Germany, February 2019
5. *Parton distribution functions and their applications* – CTEQ Summer School, University of Puerto Rico, Mayaguez, June 2018
6. *Parton distribution functions and their applications* – CTEQ Summer School, University of Pittsburgh, Pittsburgh, PA, July 21, 2017
7. *Introduction to Quantum ChromoDynamics and the parton model* – a 4-hour lecture at TMD Collaboration Summer School, Temple University, Philadelphia, PA, June 2017

8. *Parton distributions for the LHC Run-2* - a seminar at LAL Orsay, France, April 19, 2016
9. *The Structure of the Proton in the LHC Era: What we know and must know* – a seminar, University of Manchester, 2016-01-29
10. *CT14 and MET2.0 parton distributions* – a seminar at LAL, Orsay, France, May 2015
11. *Quantum chromodynamics in the LHC era* – a 2-hour lecture at the BCVSPIN-MCPF-Mitchell Joint School, Manzanillo, Mexico, December 8, 2014
12. *Strong particle interactions of elementary particles in the Higgs boson era* – a colloquium at University of Texas, Dallas, TX, October 29, 2014
13. *Parton distribution functions*— 2 hour lecture at CTEQ summer school on QCD Analysis and Phenomenology, Peking University, Beijing, China, July 2014
14. *Introduction to QCD factorization at hadron colliders* – a 2-hour lecture at the Institute for High Energy Physics, China, June 2013
15. *Introduction to QCD factorization at hadron colliders* – a 2-hour lecture at Peking University, China, June 2013
16. *Toward NNLO accuracy of parton distribution functions* – a colloquium at University of Texas, Arlington, TX, October 2011
17. *Toward NNLO accuracy of parton distribution functions* – a colloquium at Baylor University, Waco, TX, November 2011
18. *Drell-Yan-like processes* — a lecture at CTEQ summer school on QCD Analysis and Phenomenology, University of Wisconsin, Madison, WI, July 12, 2011
19. *CTEQ-TEA parton distribution functions* – 2010 Summer Program on QCD at Large Hadron Collider, Aspen Center for Physics, Aspen, CO, June 8, 2010
20. *Parton distribution functions: global analysis and practical applications* — 2 hour lecture at CTEQ summer school on QCD Analysis and Phenomenology, University of Wisconsin, Madison, WI, June 26-27, 2009
21. *Parton distributions for the LHC era* — a lecture at the Terascale PDF school, DESY, Zeuthen, Germany, November 12, 2008
22. *Parton distributions for the LHC era* — Pennsylvania State University, College Station, PA, September 17, 2008
23. *Parton distributions for the LHC era* — Wine and Cheese Seminar, Fermi National Accelerator Laboratory, June 6, 2008

24. *Implications of CTEQ6.6 global analysis for collider observables* — University of Southampton, UK, April 4, 2008
25. *From partons to new physics at the CERN Large Hadron Collider* — Southern Methodist University, Dallas, TX, March 3, 2008

Invited talks at conferences and workshops

1. *The CT18 QCD analysis with the LHC experimental data*, LoopFest XVIII workshop, Fermilab, Batavia, IL, 2019-08-13
2. *Understanding the LHC experimental data in the CT18 global analysis – 27th International Workshop on Deep Inelastic Scattering and Related Subjects*, Torino, Italy, 2019-04-09
3. *The CT18 QCD analysis and benchmarking for electroweak precision experiments – LHC EW Precision sub-group workshop*, IPPP, Durham, UK, 2019-04-05
4. *CTEQ-TEA parton distribution functions now and in the future – Workshop "Mapping PDFs and PDAs"*, ECT*, Trento, Italy, 2018-09-11
5. *Parton distributions, nonperturbative functions, quark-mass effects in W mass measurements – Workshop on W boson mass measurements*, LAL Orsay, 2018-05-24
6. *Easy visualization of experimental sensitivity to parton distributions – xFitter Collaboration meeting*, Krakow, Poland, 2018-03-05
7. *Toward the next generation of parton distribution functions – QCD@LHC workshop*, Debrecen, Hungary, 2017-09-01
8. *Fitted charm, intrinsic charm in CTEQ-TEA parton distributions – CERN Theory Institute*, Geneva, Switzerland, 2017-06-15
9. *Fitted charm, intrinsic charm in CTEQ-TEA parton distributions – 2017 LoopFest Workshop*, Argonne National Laboratory, IL, 2017-05-31
10. *The complete Hitchhiker's Guide to unpolarized Parton Distribution Functions – Pion/Kaon Structure Workshops*, Argonne National Laboratory, IL, 2017-06-01
11. *New collider experiments for CT and other parton distributions – Rencontres du Moriond*, La Thuille, Italy, 2017-03-29
12. *The complete Hitchhiker's Guide to unpolarized Parton Distribution Functions – PDFLattice workshop*, Oxford, UK, 2017-03-22
13. *CTEQ-TEA projects and xFitter connections – xFitter Developer meeting*, Oxford, UK, 2017-03-20
14. *Parton distributions for precision Higgs studies – "Precision theory for precise measurements" workshop*, Quy Nhon, Vietnam, September 2016

15. *Progress in CTEQ-TEA global analysis – “Precision theory for precise measurements”* workshop, Quy Nhon, Vietnam, September 2016
16. *Parton Distribution Functions for hadronic physics studies – Gordon Research Conference on Photonuclear Interactions*, Holderness, NH, August 9, 2016
17. *On the PDF frontier – KITP*, UC Santa Barbara, May 23, 2016
18. *Parton distribution functions for LHC Run-2 – SM@LHC workshop*, University of Pittsburgh, May 4, 2016
19. *Parton distributions from HERA to the LHC – a plenary talk at the 24th International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS’2016)*, DESY, Hamburg, April 15, 2016
20. *PDF4LHC recommendations for LHC Run-2 – a meeting of the CMS Top working group*, November 18, 2015
21. *META parton distribution functions for LHC applications – LoopFest XIV workshop*, UCLA, June 16, 2015
22. *META PDFs as a framework for PDF4LHC combinations – Workshop “Parton distributions for the LHC”*, Benasque, Spain, Feb. 19, 2015
23. *Update on the PDF4LHC prescription – Workshop “Parton distributions for the LHC”*, Benasque, Spain, Feb. 16, 2015
24. *CT10, CT14, and META parton distributions – 4th Hi-X workshop*, Frascati, Italy, November 21, 2014
25. *Validation and combination of NNLO PDF ensembles – DESY/CTEQ Workshop “Proton structure in the LHC era”*, Hamburg, Germany, October 2, 2014
26. *A meta-analysis of parton distribution functions for LHC applications – ATLAS meeting*, July 24, 2014
27. *A meta-analysis of parton distribution functions for LHC applications – LoopFest XIII workshop*, CUNY, New York, NY, June 18, 2014
28. *ResBos family of programs for TMD factorization – Workshop “3-dimensional structure of the nucleon”*, Institute for Nuclear Physics, Seattle, WA, February 25, 2014
29. *Synergy of studies of unpolarized quark PDFs – the QCD Frontier Workshop*, Newport News, VA, October 2013
30. *Parton distribution functions – APS DPF Meeting*, UC Santa Cruz, August 2013
31. *CT10 NNLO and CT1X NNLO PDFs – 21th International workshop on Deep Inelastic Scattering and Related Subjects*, Marseille, France, April 2013

32. *Status of CTEQ NNLO PDFs* – Higgs Workshop, University of Chicago, November 2012
33. *CTEQ NNLO PDFs, heavy flavors, and LHC data* – LoopFest XI workshop, Pittsburgh, May 2012
34. *NNLL/NLO resummation for diphoton production in ResBos* – Workshop on photon physics and simulation at hadron colliders, Université Pierre et Marie Curie, Paris, France, March 2012
35. *CT10 and CT12 NNLO PDFs*, 20th International workshop on Deep Inelastic Scattering and Related Subjects, Bonn, Germany, March, 2012
36. *Progress on NNLO CTEQ PDFs and Neutral-current DIS at NNLO in the general-mass scheme* – Workshop on "New trends in HERA physics", Ringberg, Germany, September 2011
37. *Toward NNLO accuracy of parton distribution functions* – QCD workshop, Galileo Galilei Institute, INFN Florence, Italy, September 2011
38. *News from CTEQ-TEA PDF analysis* – 19th International Workshop on Deep Inelastic Scattering and Related Subjects (DIS 2011), Newport News, VA, April 2011
39. *Parton distribution functions at the new frontier* – "Physics at the LHC" workshop, Aspen, CO, February 2011
40. *CTEQ PDFs and three puzzles of large- x hadronic scattering* – 2010 Fall program on Gluons and the Quark Sea at High Energies: Distributions, Polarization, Tomography, Institute for Nuclear Theory, University of Washington, Seattle, WA, October 18, 2010
41. *ResBos and nonperturbative contributions to Q_T resummation* – W boson workshop, Fermilab, October 5, 2010
42. *CT10 PDFs and the puzzle of W lepton asymmetry* – W boson workshop, Fermilab, October 4, 2010
43. *ResBos and RhicBos: Q_T resummation for (un)polarized EW boson production* – Workshop on physics of W and Z bosons, Brookhaven National Laboratory, June 24, 2010
44. *Parton distributions for event generators and with a variable QCD coupling* – XI LoopFest Workshop, State University of New York, Stony Brook, June 23, 2010
45. *Longitudinal parity-violating asymmetry in W-boson mediated jet pair production* – Workshop on high- p_T physics at RHIC, Brookhaven National Laboratory, March 16, 2010
46. *Parton distribution functions and what they mean for you* – LHC Theory Initiative Meeting, Fermilab, Chicago, October 30, 2009

47. *Longitudinal parity-violating asymmetry in W-boson mediated jet pair production* — Berkeley Summer Program on Nucleon Spin Physics, LBNL, June 4, 2009
48. *Parton distribution functions and their collider applications* — Collider Physics 2009: Joint Argonne and IIT Theory Institute, Illinois Institute of Technology, May 21, 2009
49. *Science and art of the PDF analysis* — plenary talk, 17th International Workshop on Deep Inelastic Scattering and Related Subjects (DIS 2009), Madrid, Spain, April 26, 2009
50. *ResBos and QCD aspects of W mass measurement* — W mass workshop, University of Milan, Italy, March 18, 2009
51. *Status of parton distribution functions* — Compact Muon Solenoid QCD group meeting, February 16, 2009
52. *Recent PDF analysis and its applications* — Users meeting, D0 collaboration, Fermilab, June 6, 2008
53. *Particle physics at hadron colliders: mysteries, opportunities, excitement* — Institute for Nuclear Physics, Uzbekistan, May 23, 2008
54. *From partons to new physics at CERN Large Hadron Collider* — plenary talk, PHENO 2008 Symposium, Madison, WI, April 30, 2008
55. *Correlation analysis of PDF uncertainties* — PDF4LHC workshop, CERN, Switzerland, February 22, 2008
56. *Implications of PDF analysis for collider observables* — PDF4LHC workshop, CERN, Switzerland, February 22, 2008
57. *From partons to new physics* — LHC workshop at Kavli Institute for Theoretical Physics, Santa Barbara, CA, February 13, 2008

Other talks

1. *The CT18 QCD analysis with the LHC experimental data*, QCD@LHC workshop, SUNY Buffalo, 2019-07-15
2. *The curse of worldviews*, Think-Play-Hack 2019, SMU-in-Taos, 2019-07-03
3. *Mapping the sensitivity of future facilities to collinear PDFs with PDFSense* – 27th International Workshop on Deep Inelastic Scattering and Related Subjects, Torino, Italy, 2019-04-10
4. *A global likelihood is not enough* – PDF4LHC meeting, December 13, 2018
5. *Parton distribution functions (PDFs), LHC experiments, and LHC predictions* – Pheno Symposium, University of Pittsburgh, 2018-05-08

6. *Parton distributions for LHC applications* – LHC Theory Initiative Fellows Meeting, Stanford Linear Accelerator Center, 2017-02-11
7. *CT14 distributions with Monte-Carlo replicas and intrinsic charm* – PDF4LHC meeting, September 13, 2016
8. *Interpretation of intrinsic charm* – discussion seminar, KITP, UC Santa Barbara, June 2016
9. *Phenomenological applications of PDF4LHC distributions* – PDF4LHC meeting, March 14, 2016
10. *TMD factorization and resummation methods* – Brown-bag seminar, University of Oxford, January 2016
11. *PDF4LHC recommendations for LHC Run-2* – LHC Top working group meeting, Nov. 18, 2015
12. *META2.0 parton distributions* – PDF4LHC meetings, June 26, 2015; July 8, 2015; October 27, 2015
13. *META2.0 parton distributions* – Les Houches workshop, France, June 4, 2015
14. *Combination of PDF uncertainties for LHC observables* – 23rd International workshop on Deep Inelastic Scattering and Related Subjects, SMU, April 2015
15. *Comparison of PDF combination methods* – PDF4LHC meeting, April 4, 2015
16. *META PDFs as a framework for PDF4LHC recommendations* – PDF4LHC meeting, CERN, November 2014
17. *A meta-analysis of parton distribution functions* – PROSA Integrated Analysis Meeting, January 2014
18. *MEKS program and benchmark comparison of NLO jet cross sections* – QCD@LHC workshop, East Lansing, August 2012.
19. *Correlated errors in the global PDF analysis* – QCD@LHC workshop, East Lansing, August 2012.
20. *CTEQ NNLO PDFs, heavy flavors, and the LHC data* – PDF4LHC meeting, CERN, May 23, 2012.
21. *CTEQ NNLO PDFs and heavy-quark DIS*, CTEQ meeting, Fermilab, November 2011.
22. *Progress on CTEQ PDFs*, PDF4LHC workshop, CERN, November 2011
23. *Benchmarking comparisons at NNLO* – "QCD at the LHC" workshop, St. Andrews, UK, August 2011

24. *Neutral-current DIS at NNLO in the S-ACOT-chi scheme* – "QCD at the LHC" workshop, St. Andrews, UK, August 2011
25. *News from CTEQ-TEA PDF analysis*, PDF4LHC workshop, DESY, July 2011
26. *News from CTEQ-TEA PDF analysis*, Workshop on Standard Model Benchmarks, DESY, Zeuthen, Germany, June 2011
27. *Benchmarking comparisons of NLO jet cross sections* – 2011 Les Houches Workshop "Physics at TeV Colliders", June 2011
28. *CT10/CT10W PDF analysis: the Tevatron W lepton asymmetry, low-x HERA data, and heavy quarks* – PDF4LHC meeting, DESY, Hamburg, Germany, Nov. 29, 2010
29. *Snapshots of CTEQ-TEA PDF analysis* – US ATLAS Southwest Jamboree, University of Texas, Arlington, TX, May 17, 2010
30. *Snapshots of CTEQ-TEA PDF analysis* – 18th International Workshop on Deep Inelastic Scattering and Related Subjects (DIS 2010), Florence, Italy, April 20, 2010
31. *Nuisance parameters in the PDF analysis* – CTEQ meeting, Northwestern University, Chicago, IL, Nov. 21, 2009
32. *Nuisance parameters in the PDF analysis* – PDF4LHC meeting, DESY, Hamburg, Germany, October 23, 2009
33. *CTEQ activities at MSU/SMU/Taiwan/Washington* — 17th International Workshop on Deep Inelastic Scattering and Related Subjects (DIS 2009), Madrid, Spain, April 28, 2009
34. *Intermediate mass scheme in a global QCD analysis* — 17th International Workshop on Deep Inelastic Scattering and Related Subjects (DIS 2009), Madrid, Spain, April 28, 2009
35. *Recent PDF analysis and its applications* — HERA for LHC workshop, CERN, Switzerland, May 28, 2008
36. *Strange, charm, and bottom flavors in CTEQ analysis* — 16th International Workshop on Deep Inelastic Scattering and Related Subjects (DIS 2008), London, UK, April 9, 2008
37. *CTEQ PDF analysis: status and implications for collider observables* — 16th International Workshop on Deep Inelastic Scattering and Related Subjects (DIS 2008), London, UK, April 7, 2008

Outreach lectures and activities

1. *I am a physicist* – Greenhill School, Dallas, November 2018
2. *Physics of small and big* – Institute for Gifted Boys, SMU Simmons School of Education, Dallas, December 2013
3. *A virtual visit to ATLAS detector at CERN*, Organizer, Lamplighter school, Dallas, TX, January 2013
4. *(Anti-)matter of the day* — Quarknet Workshop for high-school teachers, SMU, Dallas, TX, August 2009

Teaching

Graduate students

	Name	Institution	Degree	Year	My role
1.	Anton Konychev	Indiana U.	Ph. D.	2006	Committee member
2.	Sophia Chabysheva	SMU	Ph. D.	2009	Committee member
3.	Kamile Dindar-Yagci	SMU	Ph. D.	2012	Committee member
4.	Renat Ishmukhametov	SMU	Ph. D.	2012	Committee member
5.	Zhihua Liang	SMU	Ph. D.	2012	Advisor
6.	Bowen Wang	SMU	Ph. D.	2015	Advisor
7.	Hang Qiu	SMU	Ph. D.	2017	Committee member
8.	Huanzhao Liu	SMU	Ph. D.	2015	Committee member
9.	Benjamin Clark	SMU	Ph. D.	2016	Committee member
10.	Jeffrey Hetherly	SMU	Ph. D.	2017	Committee member
11.	Keping Xie	SMU	Ph. D.	August 2019	Advisor
12.	Bo-Ting Wang	SMU	Ph. D.	Fall 2019	Advisor
13.	Maddie McKay	SMU	Ph. D.	In progress	Committee member
14.	Xiaoxian Jing	SMU	Ph. D.	In progress	Advisor

Courses taught at SMU

1. *PHYS1304: Physics of a smartphone, or Introduction to Electricity and magnetism*, 8 semesters
2. *PHYS 4392: Electricity and magnetism for senior students*, 1 semester
3. *PHYS6321: Classical mechanics*, 1 semester
4. *PHYS6351: Statistical mechanics*, 1 semester
5. *PHYS 7311 and PHYS 7312: Theory of electromagnetism*, 4 semesters
6. *PHYS 7314 and 7315: Quantum field theory*, 4 semesters
7. *PHYS8361: Quantum chromodynamics*, 1 semester

Undergraduate research

1. Madeline Hamilton, 2017-2019
2. Sean Doyle, 2017-2018
3. Jiaxin Zhang, Undergraduate Research, Summer 2015
4. Travis Covert, Undergraduate Research, Summer 2013
5. Rafey Anwar, Undergraduate Research, Summer 2012
6. Bridget Bertoni, Undergraduate Research, Summer 2010
7. Jason South, Independent study on quantum mechanics, Fall 2011

Teaching *presentations*

1. *Just-in-Time Teaching (JiTT) in SMU statistics courses* – a CAUSE webinar, January 2017
2. *Just-in-Time Teaching (JiTT) in SMU physics and statistics courses* – a seminar, Center for Teaching Excellence, SMU, Dallas, February 2016
3. *Enlivening a large class* – Teaching Effectiveness Symposium, Center for Teaching Excellence, SMU, Dallas, August 2013

Pavel Nadolsky. Representative publications

- [1] Karol Kovařík, Pavel M. Nadolsky, and Davison E. Soper, *Hadron structure in high-energy collisions*, arXiv:1905.06957, submitted to Reviews of Modern Physics
- [2] T. J. Hobbs, B.-T. Wang, P. M. Nadolsky, and F. I. Olness, *The coming synergy between lattice QCD and high-energy phenomenology*, arXiv:1904.00022 [hep-ph], submitted to Physical Review D.
- [3] R. Anwar, M. Hamilton, P. Nadolsky, *Direct ellipsoidal fitting of discrete multi-dimensional data*, arXiv:1901.05511 [phys.data-an], accepted by the SMU Journal of Undergraduate Research.
- [4] T.-J. Hou, T. J. Hobbs, P. Nadolsky, and others, *CT18 nucleon parton distribution functions with the LHC data*, preprint SMU-HEP-19-03.
- [5] K. Xie, J. Campbell, P. Nadolsky, *Next-to-leading order general-mass scheme for heavy-quark production at the LHC*, preprint SMU-HEP-18-03.
- [6] B. T. Wang, T. J. Hobbs, S. Doyle, J. Gao, T. J. Hou, P. M. Nadolsky and F. I. Olness, *Mapping the sensitivity of hadronic experiments to nucleon structure*, Phys. Rev. D **98**, 094030 (2018).
- [7] T. J. Hou *et al.*, “*CT14 Intrinsic Charm Parton Distribution Functions from CTEQ-TEA Global Analysis*,” JHEP 1802 (2018) 059.
- [8] H. W. Lin *et al.*, “*Parton distributions and lattice QCD calculations: a community white paper*,” Prog.Part.Nucl.Phys. 100 (2018) 107.
- [9] T. J. Hou *et al.*, “*CTEQ-TEA parton distribution functions and HERA Run I and II combined data*,” Phys. Rev. D **95**, no. 3, 034003 (2017) [arXiv:1609.07968 [hep-ph]].
- [10] M. McGee, L. Stokes, P. M. Nadolsky, “*Just-in-Time Teaching in Statistics Classrooms*”, Journal of Statistics Education, 24 (2016) 16.
- [11] T. J. Hou *et al.*, “*Reconstruction of Monte Carlo replicas from Hessian parton distributions*,” JHEP **1703**, 099 (2017) [arXiv:1607.06066 [hep-ph]].
- [12] S. Dulat *et al.*, *The CT14 Global Analysis of Quantum Chromodynamics*, Phys.Rev. D93, (2016) 033006.
- [13] J. Butterworth *et al.*, *PDF4LHC recommendations for LHC Run II*, J. Phys. G **43**, 023001 (2016).
- [14] J. Rojo *et al.*, *The PDF4LHC report on PDFs and LHC data: Results from Run I and preparation for Run II*, J. Phys. G **42**, 103103 (2015).
- [15] O. Zenaiev *et al.* [PROSA Collaboration], *Impact of heavy-flavour production cross sections measured by the LHCb experiment on parton distribution functions at low x*, Eur. Phys. J. C **75**, no. 8, 396 (2015).

- [16] J. R. Andersen *et al.*, *Les Houches 2013: Physics at TeV Colliders: Standard Model Working Group Report*, arXiv:1405.1067 [hep-ph].
- [17] C. Schmidt *et al.*, *Uncertainties on H and $t\bar{t}$ predictions at the LHC (and update on intrinsic charm)*, PoS DIS **2014**, 146 (2014).
- [18] J. Gao and P. Nadolsky, *A meta-analysis of parton distribution functions*, JHEP **1407**, 035 (2014).
- [19] S. Dulat, T. J. Hou, J. Gao, J. Huston, P. Nadolsky, J. Pumplin, C. Schmidt and D. Stump *et al.*, *Higgs Boson Cross Section from CTEQ-TEA Global Analysis*, Phys. Rev. D **89**, 113002 (2014).
- [20] M. Guzzi, P. M. Nadolsky and B. Wang, *Nonperturbative contributions to a resummed leptonic angular distribution in inclusive neutral vector boson production*, Phys. Rev. D **90**, 014030 (2014).
- [21] R. D. Ball, S. Carrazza, L. Del Debbio, S. Forte, J. Gao, N. Hartland, J. Huston and P. Nadolsky *et al.*, *Parton Distribution Benchmarking with LHC Data*, JHEP **1304**, 125 (2013) [arXiv:1211.5142 [hep-ph]].
- [22] J. Gao, Z. Liang, D. E. Soper, H. -L. Lai, P. M. Nadolsky and C. -P. Yuan, *MEKS: a program for computation of inclusive jet cross sections at hadron colliders*, Comput. Phys. Commun. **184**, 1626 (2013) [arXiv:1207.0513 [hep-ph]].
- [23] J. Gao, M. Guzzi and P. M. Nadolsky, *Charm quark mass dependence in a global QCD analysis*, Eur. Phys. J. C **73**, 2541 (2013) [arXiv:1304.3494].
- [24] J. Gao, M. Guzzi and P. M. Nadolsky, *Charm quark mass dependence in the CTEQ NNLO global QCD analysis*, PoS DIS **2013**, 302 (2013) [arXiv:1306.5319 [hep-ph]].
- [25] V. Guzey, M. Guzzi, P. M. Nadolsky, M. Strikman and B. Wang, *Massive neutral gauge boson production as a probe of nuclear modifications of parton distributions at the LHC*, Eur. Phys. J. A **49**, 35 (2013) [Eur. Phys. J. A **49**, 35 (2013)] [arXiv:1212.5344 [hep-ph]].
- [26] S. Dalley, S. Adhikari and P. Nadolsky, *Optimizing Polar Angle Asymmetry Observables at Colliders*, Acta Phys. Polon. Supp. **6**, 213 (2013) [arXiv:1211.4003 [hep-ph]].
- [27] M. Guzzi, P. M. Nadolsky, *Nonperturbative contributions to a resummed leptonic angular distribution in inclusive Z/γ^* boson production*, in Proceedings of the QCD Evolution Workshop, Newport News, VA, May 14-17, 2012. arXiv:1209.1252 [hep-ph].
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