

Publication List

Peter B. Denton

Updated: July 14, 2022^{*†}

Articles (56)

- [1] A. Coleman *et al.*, “Ultra-High-Energy Cosmic Rays: The Intersection of the Cosmic and Energy Frontiers,” [arXiv:2205.05845](#) [[astro-ph.HE](#)].
- [2] P. B. Denton and J. Gehrlein, “New reactor data improves robustness of neutrino mass ordering determination,” *PRD (in press)* (4, 2022) , [arXiv:2204.09060](#) [[hep-ph](#)].
- [3] C. A. Argüelles *et al.*, “Snowmass White Paper: Beyond the Standard Model effects on Neutrino Flavor,” in *2022 Snowmass Summer Study*. 3, 2022. [arXiv:2203.10811](#) [[hep-ph](#)].
- [4] M. Ackermann *et al.*, “High-Energy and Ultra-High-Energy Neutrinos,” in *2022 Snowmass Summer Study*. 3, 2022. [arXiv:2203.08096](#) [[hep-ph](#)].
- [5] M. Abdullah *et al.*, “Coherent elastic neutrino-nucleus scattering: Terrestrial and astrophysical applications,” in *2022 Snowmass Summer Study*. 3, 2022. [arXiv:2203.07361](#) [[hep-ph](#)].
- [6] M. A. Acero *et al.*, “White Paper on Light Sterile Neutrino Searches and Related Phenomenology,” [arXiv:2203.07323](#) [[hep-ex](#)].
- [7] E. Abdalla *et al.*, “Cosmology intertwined: A review of the particle physics, astrophysics, and cosmology associated with the cosmological tensions and anomalies,” *JHEAp* **34** (2022) 49–211, [arXiv:2203.06142](#) [[astro-ph.CO](#)].
- [8] P. B. Denton *et al.*, “Tau Neutrinos in the Next Decade: from GeV to EeV,” [arXiv:2203.05591](#) [[hep-ph](#)]. *Editor.
- [9] J. L. Feng *et al.*, “The Forward Physics Facility at the High-Luminosity LHC,” [arXiv:2203.05090](#) [[hep-ex](#)].

^{*}For the latest version see: [peterdenton.github.io](#)

[†]Most author lists are in alphabetical order as that is the standard in particle physics.

- [10] J. M. Berryman *et al.*, “Neutrino Self-Interactions: A White Paper,” 3, 2022.
[arXiv:2203.01955](#) [[hep-ph](#)].
- [11] D. Caratelli *et al.*, “Low-Energy Physics in Neutrino LArTPCs,” 3, 2022.
[arXiv:2203.00740](#) [[physics.ins-det](#)].
- [12] P. B. Denton, “Sterile Neutrino Searches with MicroBooNE: Electron Neutrino Disappearance,” *PRL (in press)* (11, 2021) , [arXiv:2111.05793](#) [[hep-ph](#)].
- [13] P. B. Denton and R. Pestes, “Neutrino oscillations through the Earth’s core,” *Phys. Rev. D* **104** no. 11, (2021) 113007, [arXiv:2110.01148](#) [[hep-ph](#)].
- [14] P. B. Denton, “Tau neutrino identification in atmospheric neutrino oscillations without particle identification or unitarity,” *Phys. Rev. D* **104** no. 11, (2021) 113003, [arXiv:2109.14576](#) [[hep-ph](#)].
- [15] P. B. Denton and J. Gehrlein, “New tau neutrino oscillation and scattering constraints on unitarity violation,” *JHEP (in press)* (9, 2021) , [arXiv:2109.14575](#) [[hep-ph](#)].
- [16] L. A. Anchordoqui *et al.*, “The Forward Physics Facility: Sites, Experiments, and Physics Potential,” [arXiv:2109.10905](#) [[hep-ph](#)].
- [17] H. Davoudiasl, P. B. Denton, and J. Gehrlein, “Connecting the Extremes: A Story of Supermassive Black Holes and Ultralight Dark Matter,” *Phys. Rev. Lett.* **128** no. 8, (2022) 081101, [arXiv:2109.01678](#) [[astro-ph.CO](#)].
- [18] P. B. Denton and S. J. Parke, “Parameter symmetries of neutrino oscillations in vacuum, matter, and approximation schemes,” *Phys. Rev. D* **105** no. 1, (2022) 013002, [arXiv:2106.12436](#) [[hep-ph](#)].
- [19] H. Davoudiasl, P. B. Denton, and D. A. McGady, “Ultralight Fermionic Dark Matter,” *Phys. Rev. D* **103** (2021) 055014, [arXiv:2008.06505](#) [[hep-ph](#)].
- [20] P. B. Denton and J. Gehrlein, “A Statistical Analysis of the COHERENT Data and Applications to New Physics,” *JHEP* **04** (2021) 266, [arXiv:2008.06062](#) [[hep-ph](#)].
- [21] P. B. Denton, J. Gehrlein, and R. Pestes, “CP-Violating Neutrino Non-Standard Interactions in Long-Baseline-Accelerator Data,” *Phys. Rev. Lett.* **126** (2021) 051801, [arXiv:2008.01110](#) [[hep-ph](#)].
- [22] P. B. Denton and Y. Kini, “Ultra-High-Energy Tau Neutrino Cross Sections with GRAND and POEMMA,” *Phys. Rev. D* **102** (2020) 123019, [arXiv:2007.10334](#) [[astro-ph.HE](#)].
- [23] H. Davoudiasl, P. B. Denton, and J. Gehrlein, “An Attractive Scenario for Light Dark Matter Direct Detection,” *Phys. Rev. D* **102** (7, 2020) 091701, [arXiv:2007.04989](#) [[hep-ph](#)].

- [24] P. B. Denton and R. Pestes, “The Impact of Different Parameterizations on the Interpretation of CP Violation in Neutrino Oscillations,” *JHEP* **05** (2021) 139, [arXiv:2006.09384 \[hep-ph\]](#).
- [25] A. Abdullahi and P. B. Denton, “Visible Decay of Astrophysical Neutrinos at IceCube,” *Phys. Rev. D* **102** no. 2, (2020) 023018, [arXiv:2005.07200 \[hep-ph\]](#).
- [26] P. B. Denton, “A Return To Neutrino Normalcy,” [arXiv:2003.04319 \[hep-ph\]](#).
- [27] **FASER** Collaboration, H. Abreu *et al.*, “Technical Proposal: FASERnu,” [arXiv:2001.03073 \[physics.ins-det\]](#).
- [28] P. B. Denton, S. J. Parke, and X. Zhang, “Fibonacci Fast Convergence for Neutrino Oscillations in Matter,” *Phys. Lett. B* **807** (2020) 135592, [arXiv:1909.02009 \[hep-ph\]](#).
- [29] P. B. Denton, S. J. Parke, T. Tao, and X. Zhang, “Eigenvectors from Eigenvalues: a survey of a basic identity in linear algebra,” *Bull. Am. Math. Soc.* (8, 2019) , [arXiv:1908.03795 \[math.RA\]](#).
- [30] **FASER** Collaboration, H. Abreu *et al.*, “Detecting and Studying High-Energy Collider Neutrinos with FASER at the LHC,” *Eur. Phys. J. C* **80** no. 1, (2020) 61, [arXiv:1908.02310 \[hep-ex\]](#).
- [31] C. A. Argüelles *et al.*, “White Paper on New Opportunities at the Next-Generation Neutrino Experiments (Part 1: BSM Neutrino Physics and Dark Matter),” [arXiv:1907.08311 \[hep-ph\]](#).
- [32] P. B. Denton, S. J. Parke, and X. Zhang, “Eigenvalues: the Rosetta Stone for Neutrino Oscillations in Matter,” *Phys. Rev. D* **101** (2020) 093001, [arXiv:1907.02534 \[hep-ph\]](#).
- [33] P. Bhupal Dev*, K. Babu*, P. B. Denton*, P. A. Machado*, *et al.*, “Neutrino Non-Standard Interactions: A Status Report,” *SciPost Phys. Proc.* **2** (2019) 001, [arXiv:1907.00991 \[hep-ph\]](#). *Co-Editors.
- [34] H. Davoudiasl and P. B. Denton, “Ultra Light Boson Dark Matter and Event Horizon Telescope Observations of M87*,” *Phys. Rev. Lett.* **123** (2019) 021102, [arXiv:1904.09242 \[astro-ph.CO\]](#).
- [35] G. A. Barenboim, P. B. Denton, and I. M. Oldengott, “Inflation meets neutrinos,” *Phys. Rev. D* **99** (2019) 083515, [arXiv:1903.02036 \[astro-ph.CO\]](#).
- [36] P. B. Denton and S. J. Parke, “Simple and Precise Factorization of the Jarlskog Invariant for Neutrino Oscillations in Matter,” *Phys. Rev. D* **100** (2019) 053004, [arXiv:1902.07185 \[hep-ph\]](#).
- [37] G. Barenboim, P. B. Denton, S. J. Parke, and C. A. Ternes, “Neutrino oscillation probabilities through the looking glass,” *Phys. Lett. B* **791** (2019) 351–360, [arXiv:1902.00517 \[hep-ph\]](#).

- [38] P. B. Denton, Y. Farzan, and I. M. Shoemaker, “Activating the fourth neutrino of the 3+1 scheme,” *Phys. Rev.* **D99** no. 3, (2019) 035003, [arXiv:1811.01310 \[hep-ph\]](#).
- [39] **GRAND** Collaboration, J. Álvarez Muñiz *et al.*, “The Giant Radio Array for Neutrino Detection (GRAND): Science and Design,” *Sci. China Phys. Mech. Astron.* **63** no. 1, (2020) 219501, [arXiv:1810.09994 \[astro-ph.HE\]](#).
- [40] K. Møller, P. B. Denton, and I. Tamborra, “Cosmogenic Neutrinos Through the GRAND Lens Unveil the Nature of Cosmic Accelerators,” *JCAP* **1905** (2019) 047, [arXiv:1809.04866 \[astro-ph.HE\]](#).
- [41] P. B. Denton and S. J. Parke, “The Effective Δm_{ee}^2 in Matter,” *Phys. Rev.* **D98** (2018) 093001, [arXiv:1808.09453 \[hep-ph\]](#).
- [42] P. B. Denton, S. J. Parke, and X. Zhang, “Rotations Versus Perturbative Expansions for Calculating Neutrino Oscillation Probabilities in Matter,” *Phys. Rev.* **D98** no. 3, (2018) 033001, [arXiv:1806.01277 \[hep-ph\]](#).
- [43] P. B. Denton and I. Tamborra, “Invisible Neutrino Decay Resolves IceCube’s Track and Cascade Tension,” *Phys. Rev. Lett.* **121** no. 12, (2018) 121802, [arXiv:1805.05950 \[hep-ph\]](#).
- [44] P. B. Denton, Y. Farzan, and I. M. Shoemaker, “Testing large non-standard neutrino interactions with arbitrary mediator mass after COHERENT data,” *JHEP* **07** (2018) 037, [arXiv:1804.03660 \[hep-ph\]](#).
- [45] K. Møller, A. M. Suliga, I. Tamborra, and P. B. Denton, “Measuring the supernova unknowns at the next-generation neutrino telescopes through the diffuse neutrino background,” *JCAP* **1805** (2018) 066, [arXiv:1804.03157 \[astro-ph.HE\]](#).
- [46] P. B. Denton and I. Tamborra, “The Bright and Choked Gamma-Ray Burst Contribution to the IceCube and ANTARES Low-Energy Excess,” *JCAP* **1804** no. 04, (2018) 058, [arXiv:1802.10098 \[astro-ph.HE\]](#).
- [47] P. B. Denton and S. J. Parke, “Addendum to “Compact perturbative expressions for neutrino oscillations in matter”,” *JHEP* **06** (2018) 109, [arXiv:1801.06514 \[hep-ph\]](#).
- [48] P. B. Denton and I. Tamborra, “Exploring the Properties of Choked Gamma-ray Bursts with IceCube’s High-energy Neutrinos,” *Astrophys. J.* **855** no. 1, (2018) 37, [arXiv:1711.00470 \[astro-ph.HE\]](#).
- [49] P. B. Denton, D. Marfatia, and T. J. Weiler, “The Galactic Contribution to IceCube’s Astrophysical Neutrino Flux,” *JCAP* **1708** no. 08, (2017) 033, [arXiv:1703.09721 \[astro-ph.HE\]](#).

- [50] P. Coloma, P. B. Denton, M. C. Gonzalez-Garcia, M. Maltoni, and T. Schwetz, “Curtailling the Dark Side in Non-Standard Neutrino Interactions,” *JHEP* **04** (2017) 116, [arXiv:1701.04828 \[hep-ph\]](#).
- [51] P. B. Denton, H. Minakata, and S. J. Parke, “Compact Perturbative Expressions For Neutrino Oscillations in Matter,” *JHEP* **06** (2016) 051, [arXiv:1604.08167 \[hep-ph\]](#).
- [52] P. B. Denton and T. J. Weiler, “Sensitivity of full-sky experiments to large scale cosmic ray anisotropies,” *JHEAp* **8** (2015) 1–9, [arXiv:1505.03922 \[astro-ph.HE\]](#).
- [53] P. B. Denton and T. J. Weiler, “The Fortuitous Latitude of the Pierre Auger Observatory and Telescope Array for Reconstructing the Quadrupole Moment,” *Astrophys.J.* **802** no. 1, (2015) 25, [arXiv:1409.0883 \[astro-ph.HE\]](#).
- [54] L. A. Anchordoqui, P. B. Denton, H. Goldberg, T. C. Paul, L. H. M. Da Silva, B. J. Vlcek, and T. J. Weiler, “Weinberg’s Higgs portal confronting recent LUX and LHC results together with upper limits on B^+ and K^+ decay into invisibles,” *Phys. Rev.* **D89** no. 8, (2014) 083513, [arXiv:1312.2547 \[hep-ph\]](#).
- [55] P. B. Denton and T. J. Weiler, “Using Integral Dispersion Relations to Extend the LHC Reach for New Physics,” *Phys. Rev.* **D89** no. 3, (2014) 035013, [arXiv:1311.1248 \[hep-ph\]](#).
- [56] N. Arsene, L. I. Caramete, P. B. Denton, and O. Micu, “Quantum Black Holes Effects on the Shape of Extensive Air Showers,” *Rom. Rep. Phys.* **69** (2017) 105, [arXiv:1310.2205 \[hep-ph\]](#).

Conference Proceedings

- [1] **GRAND** Collaboration, K. Kotera, “The Giant Radio Array for Neutrino Detection (GRAND) Project,” 7, 2021. [arXiv:2108.00032 \[astro-ph.HE\]](#).
- [2] S. J. Parke, P. B. Denton, and H. Minakata, “Analytic Neutrino Oscillation Probabilities in Matter: Revisited,” [arXiv:1801.00752 \[hep-ph\]](#).
- [3] **JEM-EUSO** Collaboration, P. B. Denton, L. A. Anchordoqui, A. A. Berlind, M. Richardson, and T. J. Weiler, “Sensitivity of orbiting JEM-EUSO to large-scale cosmic-ray anisotropies,” *J.Phys.Conf.Ser.* **531** (2014) 012004, [arXiv:1401.5757 \[astro-ph.IM\]](#).

Talks (81 including 49 invited)

- [1] “Sterile neutrinos at 1 eV.” https://www.mpi-hd.mpg.de/lin/seminar_theory.en.php. Invited seminar at MPI Heidelberg, July 2022.

- [2] “Neutrino Oscillations and Theory Biases.”
<https://indico.bnl.gov/event/15829/timetable/>. **Invited** lecture for students at BNL, June 2022.
- [3] “Connecting the Extremes: Story of Supermassive Black Holes and Ultralight Dark Matter.” <https://n3as.berkeley.edu/p/event/su22-jun14/>. **Invited** seminar at UC Berkeley via N3AS, June 2022.
- [4] “Connecting the Extremes: Story of Supermassive Black Holes and Ultralight Dark Matter.” <https://theory.tifr.res.in/~sotu/previous.php>. **Invited** seminar at Tata Institute of Fundamental Research, India, June 2022.
- [5] “Flavor mixing, CP violation, and Unitarity.”
https://neutrino2022.org/program/detail_program. **Invited** plenary talk at Neutrino 2022, Seoul Korea, June 2022.
- [6] “CP Violation at Long-Baseline Neutrino Experiments.”
<https://indico.cern.ch/event/1125426/contributions/4868720/>. **Invited** plenary talk at the Mitchell Conference on Collider, Dark Matter, and Neutrino Physics; Texas A&M, College Station TX, May 2022.
- [7] “Neutrino Theory Overview.”
<https://indico.sanfordlab.org/event/28/contributions/310/>. **Invited** plenary talk at the Conference on Science at the Sanford Underground Research Facility (CoSSURF), May 2022.
- [8] “Nu physics: Theory and practice.”
<https://indico.cern.ch/event/1089132/contributions/4863585/>. **Invited** plenary talk at the Phenomenology Symposium, Pittsburgh, May 2022.
- [9] “CP Violation at Long-Baseline Neutrino Experiments.”
<https://lawphysics.wordpress.com/2022/04/20/w131-peter-denton-cp-violation-at-long-baseline/>. **Invited** seminar in the Latin American Webinar Physics series, April 2022.
- [10] “CP Violation at Long-Baseline Neutrino Experiments.”. **Invited** seminar at Harvard, April 2022.
- [11] “Connecting the Extremes: Story of Supermassive Black Holes and Ultralight Dark Matter.”. **Invited** seminar at MIT, April 2022.
- [12] “New Perspectives on Atmospheric Neutrinos.”. **Invited** seminar at INFN Torino, March 2022.
- [13] “Tau Neutrino Identification at IceCube for Unitary Violation Tests.”
<https://indico.cern.ch/event/1103445/contributions/4724172/>. Talk at Snowmass BSM neutrino workshop, February 2022.

- [14] “Neutrinos and Cosmic Rays at Snowmass.”
<https://indico.bnl.gov/event/13887/>. Talk at BNL Snowmass Retreat,
 December 2021.
- [15] “Astrophysical Neutrino Decay.”
<https://indico.ipmu.jp/event/397/contributions/6390/>. **Invited** talk at Dark
 Sectors of Astroparticle Physics at IPMU, Japan December 2021.
- [16] “Neutrino Oscillations at FPF.”
<https://indico.cern.ch/event/1076733/contributions/4577119/>. Talk at
 Third Forward Physics Facility October 2021.
- [17] “Astrophysical Neutrino Decay.”
<https://indico.ific.uv.es/event/6178/contributions/15526/>. Talk at TAUP
 August 2021.
- [18] “Astrophysical Neutrino Decay.”
<https://indico.desy.de/event/28202/contributions/105961/>. Talk at
 EPS-HEP July 2021.
- [19] “CP-Violating Neutrino Non-Standard Interactions in Long-Baseline-Accelerator
 Data.” <https://indico.cern.ch/event/1034469/contributions/4430079/>. Talk
 at DPF at FSU July 2021.
- [20] “CP-Violating Neutrino Non-Standard Interactions in Long-Baseline-Accelerator
 Data.” <https://indico.ibs.re.kr/event/357/timetable/>. Talk at PASCOS in
 IBS Koreas June 2021.
- [21] “CP-Violating Neutrino Non-Standard Interactions in Long-Baseline-Accelerator
 Data.” <https://indico.cern.ch/event/982783/contributions/4362341/>. Talk
 at Pheno May 2021.
- [22] “Neutrino Oscillations in Matter and Linear Algebra.”. **Invited** colloquium at
 Illinois Institute of Technology April 2021.
- [23] “CP Violation at Long-Baseline Neutrino Experiments.”. **Invited** seminar at
 Michigan State University March 2021.
- [24] “Astrophysical Neutrino Decay.”
<https://agenda.infn.it/event/24250/contributions/129755/>. Talk at the XIX
 International Workshop on Neutrino Telescopes February 2021.
- [25] “CP Violation at Long-Baseline Neutrino Experiments.”
<https://indico.cern.ch/event/1001277/>. **Invited** seminar at Sydney CPPC
 February 2021.
- [26] “Ultralight Fermionic Dark Matter.”. **Invited** talk at Asymptotic Safety and Dark
 Matter workshop at OSU December 2020.

- [27] “Ultralight Fermionic Dark Matter.” <https://www.ictp-saifr.org/dmw2020/>. Talk at 3rd South American Dark Matter Workshop at ICTP in Sao Paulo December 2020.
- [28] “3+1+NSI and CP Violation.”. **Invited** seminar at KIAS November 2020.
- [29] “CP Violation at Long-Baseline Neutrino Experiments.” <https://indico.bnl.gov/event/8008/>. Talk at BNL HET Group October 2020.
- [30] “CP Violation at Long-Baseline Neutrino Experiments.” <https://npc.fnal.gov/neutrino-seminar-series/>. **Invited** Neutrino Physics Center seminar October 2020 at Fermilab.
- [31] “The Lightest Dark Matter.”. **Invited** seminar October 2020 at University of Sussex.
- [32] “Astrophysical Neutrino Decay.” <https://indico.cern.ch/event/868940/contributions/3899680/>. Talk at ICHEP July 2020 in Prague (virtual).
- [33] “Visible Decay of Astrophysical Neutrinos.” <https://indico.bnl.gov/event/7985/>. Talk at BNL HET Group May 2020.
- [34] “Ultralight Boson Dark Matter Constraints from Superradiance Leveraging the Event Horizon Telescope Collaboration’s Observations of M87*.” <https://indico.cern.ch/event/858682/contributions/3837326/>. Talk at Pheno May 2020 in Pittsburgh, PA (virtual).
- [35] “Beyond the Standard Model physics with accelerator neutrino experiments.” <https://aps-april.onlineeventpro.freeman.com/sessions/15336169/subsession/25117238/> **Invited** plenary at APS April Meeting 2020 (virtual).
- [36] “LMA-Dark: Large New Physics Effects in Neutrino Oscillations.” <https://indico.bnl.gov/event/7665/>. Talk at BNL HET Group February 2020.
- [37] “Motivation for neutrino precision in oscillations.” <https://indico.bnl.gov/event/7282/>. **Invited** talk at BNL Snowmass Intensity Frontier & Astrophysics Workshop February 2020.
- [38] “Recent results in neutrino oscillation theory.” <https://www.physics.umass.edu/events/2019-11-15-recent-results-neutrino-oscillation> **Invited** seminar at UMass Amherst November 2019.
- [39] “Realizing the physics goals at DUNE.” <https://indico.fnal.gov/event/21535/other-view>. **Invited** talk at Modules Of Opportunity for DUNE workshop at BNL November 2019.
- [40] “Recent results in neutrino oscillation theory.” <https://physics.osu.edu/events/high-energy-physics-seminar-peter-dentonbrookhaven> **Invited** seminar at OSU November 2019.

- [41] “New physics probes in future neutrino experiments.”
<https://indico.bnl.gov/event/6652/>. **Invited** colloquium at BNL October 2019.
- [42] “Recent results in neutrino oscillation theory.”
<https://indico.cern.ch/event/800930/contributions/3557081/>. Talk at CERN Neutrino Platform October 2019.
- [43] “Neutrino theory in the coming years.” <https://indico.bnl.gov/event/6710/>.
Invited talk at BNL Snowmass Discussion October 2019.
- [44] “Recent results in neutrino oscillation theory.”
<https://theory.fnal.gov/events/event/tbd-neutrinos/>. **Invited** theory seminar at Fermilab September 2019.
- [45] “Exact neutrino oscillation probabilities in matter.”
<https://indico.ific.uv.es/event/3649/contributions/11349/>. Talk given at TomFest at Vanderbilt August 2019.
- [46] “Neutrino oscillation probabilities in matter.”
<https://indico.cern.ch/event/782953/contributions/3444777/>. Talk given at the 2019 DPF meeting at Northeastern July 2019.
- [47] “Neutrino self interactions in the early universe.”
<https://indico.cern.ch/event/812851/contributions/3432032/>. **Invited** talk at NTN NSI Workshop at Wash U May 2019.
- [48] “Partial neutrino decay resolves icecube’s track and cascade tension.”
<https://indico.bnl.gov/event/5875/>. Talk at BNL HET Group May 2019.
- [49] “Neutrino Oscillation Probabilities in Matter.”
<http://theory.physics.uci.edu/seminars.html>. **Invited** seminar at UC Irvine May 2019.
- [50] “Neutrino Oscillation Probabilities in Matter.”
<http://www.theory.caltech.edu/people/carol/seminar.html>. Seminar at Caltech May 2019.
- [51] “Partial Neutrino Decay Addresses the Track – Cascade Tension at IceCube.”
<https://indico.cern.ch/event/777988/contributions/3410555/>. Talk at Pheno May 2019 in Pittsburgh, PA.
- [52] “Neutrino Oscillation Probabilities in Matter.”
<https://www.phys.psu.edu/seminars/all-seminars>. **Invited** seminar at Penn State April 2019.
- [53] “Neutrino Oscillation Probabilities in Matter.”
<https://www.phys.vt.edu/Talks/NeutrinoPhysicsSeminar.html>. **Invited** seminar at Virginia Tech February 2019.

- [54] “Analytic and Compact Expressions for Neutrino Oscillations in Matter.”
<https://dx.doi.org/10.5281/zenodo.2642372>. **Invited** talk at PONDD workshop at Fermilab December 2018.
- [55] “Finding the Unexpected in IceCube.”. **Invited** N-Talk at Niels Bohr International Academy September 2018 in Copenhagen.
- [56] “High Energy Neutrino Parameter Estimation.”. **Invited** talk at GRAND workshop at IAP August 2018.
- [57] “New Neutrino Interactions: Breaking Degeneracies and Relaxing Sterile Tensions.”. **Invited** seminar at BNL August 2018.
- [58] “Analytic and compact perturbative expressions for neutrino oscillations in matter.”
<https://indico.cern.ch/event/686555/contributions/2977525/>. Talk at the International Conference of High Energy Physics (ICHEP) July 2018 in Seoul.
- [59] “Gamma Ray Bursts, Supernovae, Neutrinos, and IceCube.”. **Invited** talk at IIHE April 2018 in Brussels.
- [60] “Gamma Ray Bursts, Supernovae, Neutrinos, and IceCube.”. **Invited** talk at DESY January 2018 in Zeuthen.
- [61] “Gamma Ray Bursts, Supernovae, Neutrinos, and IceCube.”. **Invited** talk at Arizona State University January 2018.
- [62] “Supernova - Gamma Ray Burst - Neutrino Connection.”. **Invited** SUPER-STARS talk at DARK Cosmology Center November 2017 in Copenhagen.
- [63] “Gamma Ray Bursts, Supernovae, Neutrinos, and IceCube.”. **Invited** N-Talk at Niels Bohr International Academy November 2017 in Copenhagen.
- [64] “Analytic and compact perturbative expressions for neutrino oscillations in matter.”. **Invited** seminar at Campinas State University October 2017.
- [65] “COHERENT and the LMA-Dark NSI Solution.”
<https://indico.uu.se/event/324/session/20/contribution/182>. **Invited** talk at the NUFACCT 2017 workshop September 2017 in Uppsala.
- [66] “What We Can Tell About the Sources of IceCube’s Neutrinos, and What IceCube Can Tell Us About Gamma Ray Bursts.”
<http://astro.fnal.gov/events/event/tbd-35/>. Astrophysics theory seminar at Fermilab August 2017 in Batavia, IL.
- [67] “The Galactic Contribution to IceCube’s Astrophysical Neutrino Flux.”
<https://indico.cern.ch/event/615891/contributions/2608935/>. Talk at TeV Particle Astrophysics at CCAPP in Columbus, OH.

- [68] “Finding Anisotropies in Cosmic Rays and Neutrinos.”
<http://nbia.nbi.ku.dk/nbia-seminars/nbia-seminar-peter-denton/>. **Invited**
 seminar at the Niels Bohr International Academy astroparticle seminar April 2017 in
 Copenhagen.
- [69] “Analytic and compact perturbative expressions for neutrino oscillations in matter.”.
 Talk at the Center of Excellence for Particle Physics at the Terascale at the
 University of Melbourne December 2016.
- [70] “Spherical Harmonics as a Tool for Finding Anisotropies in UHECR and
 Astrophysical Neutrino Fluxes.”. **Invited** talk at the Danish Astroparticle Physics
 Meeting October 2016 in Odense.
- [71] “The Standard Neutrino Oscillation Parameters and a Surprising Alternative
 Solution.”. **Invited** N-Talk at Niels Bohr International Academy September 2016 in
 Copenhagen.
- [72] “Analytic and compact perturbative expressions for neutrino oscillations in matter.”
<http://indico.cern.ch/event/432527/contributions/1071859/>. Talk at the
 International Conference of High Energy Physics (ICHEP) August 2016 in Chicago,
 IL.
- [73] “Analytic and compact perturbative expressions for neutrino oscillations in matter.”
<http://theory.fnal.gov/seminars/seminars.html>. **Invited** talk at the Fermilab
 theory seminar July 2016 in Batavia, IL.
- [74] “Methods for Probing New Physics at High Energies.”
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