

# Publication List

Peter B. Denton

Updated: August 23, 2021<sup>\*†</sup>

## Articles

- [1] P. B. Denton and S. J. Parke, “Symmetries of neutrino oscillations in vacuum, matter, and approximation schemes,” [arXiv:2106.12436 \[hep-ph\]](#).
- [2] H. Davoudiasl, P. B. Denton, and D. A. McGady, “Ultralight Fermionic Dark Matter,” *Phys. Rev. D* **103** (2021) 055014, [arXiv:2008.06505 \[hep-ph\]](#).
- [3] 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 \[hep-ph\]](#).
- [4] 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 \[hep-ph\]](#).
- [5] 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 \[astro-ph.HE\]](#).
- [6] 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 \[hep-ph\]](#).
- [7] 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 \[hep-ph\]](#).
- [8] A. Abdullahi and P. B. Denton, “Visible Decay of Astrophysical Neutrinos at IceCube,” *Phys. Rev. D* **102** no. 2, (2020) 023018, [arXiv:2005.07200 \[hep-ph\]](#).
- [9] P. B. Denton, “A Return To Neutrino Normalcy,” [arXiv:2003.04319 \[hep-ph\]](#).

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<sup>\*</sup>For the latest version see: [peterdenton.github.io](https://peterdenton.github.io)

<sup>†</sup>Most author lists are in alphabetical order as that is the standard in particle physics.

- [10] **FASER** Collaboration, H. Abreu *et al.*, “Technical Proposal: FASERnu,” [arXiv:2001.03073](#) [[physics.ins-det](#)].
- [11] 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](#)].
- [12] P. B. Denton, S. J. Parke, T. Tao, and X. Zhang, “Eigenvectors from Eigenvalues,” [arXiv:1908.03795](#) [[math.RA](#)].
- [13] **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](#)].
- [14] 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](#)].
- [15] 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](#)].
- [16] 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.
- [17] 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](#)].
- [18] 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](#)].
- [19] 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](#)].
- [20] 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](#)].
- [21] P. B. Denton, Y. Farzan, and I. M. Shoemaker, “Activating the fourth neutrino of the 3+1 scheme,” *Phys. Rev. D* **99** no. 3, (2019) 035003, [arXiv:1811.01310](#) [[hep-ph](#)].
- [22] **GRAND** Collaboration, J. Álvarez Muñoz *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](#)].

- [23] 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 \[astro-ph.HE\]](#).
- [24] P. B. Denton and S. J. Parke, “The Effective  $\Delta m_{ee}^2$  in Matter,” *Phys. Rev.* **D98** (2018) 093001, [arXiv:1808.09453 \[hep-ph\]](#).
- [25] 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 \[hep-ph\]](#).
- [26] 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 \[hep-ph\]](#).
- [27] 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 \[hep-ph\]](#).
- [28] K. Moller, 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 \[astro-ph.HE\]](#).
- [29] 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 \[astro-ph.HE\]](#).
- [30] P. B. Denton and S. J. Parke, “Addendum to “Compact perturbative expressions for neutrino oscillations in matter”,,” *JHEP* **06** (2018) 109, [arXiv:1801.06514 \[hep-ph\]](#).
- [31] 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 \[astro-ph.HE\]](#).
- [32] 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 \[astro-ph.HE\]](#).
- [33] 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 \[hep-ph\]](#).
- [34] P. B. Denton, H. Minakata, and S. J. Parke, “Compact Perturbative Expressions For Neutrino Oscillations in Matter,” *JHEP* **06** (2016) 051, [arXiv:1604.08167 \[hep-ph\]](#).
- [35] 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 \[astro-ph.HE\]](#).

- [36] 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 \[astro-ph.HE\]](#).
- [37] 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 \[hep-ph\]](#).
- [38] 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 \[hep-ph\]](#).
- [39] N. Arsene, L. I. Caramete, P. B. Denton, and O. Micu, “Quantum Black Holes Effects on the Shape of Extensive Air Showers,” [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

- [1] “Astrophysical Neutrino Decay.” <https://indico.ific.uv.es/event/6178/contributions/15526/>. Talk at TAUP August 2021.
- [2] “Astrophysical Neutrino Decay.” <https://indico.desy.de/event/28202/contributions/105961/>. Talk at EPS-HEP July 2021.
- [3] “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.
- [4] “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.

- [5] “CP-Violating Neutrino Non-Standard Interactions in Long-Baseline-Accelerator Data.” <https://indico.cern.ch/event/982783/contributions/4362341/>. Talk at Pheno May 2021.
- [6] “Neutrino Oscillations in Matter and Linear Algebra.”. **Invited** colloquium at Illinois Institute of Technology April 2021.
- [7] “CP Violation at Long-Baseline Neutrino Experiments.”. **Invited** seminar at Michigan State University March 2021.
- [8] “Astrophysical Neutrino Decay.”  
<https://agenda.infn.it/event/24250/contributions/129755/>. Talk at the XIX International Workshop on Neutrino Telescopes February 2020.
- [9] “CP Violation at Long-Baseline Neutrino Experiments.”  
<https://indico.cern.ch/event/1001277/>. **Invited** seminar at Sydney CPDC February 2021.
- [10] “Ultralight Fermionic Dark Matter.”. **Invited** talk at Asymptotic Safety and Dark Matter workshop at OSU December 2020.
- [11] “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.
- [12] “3+1+NSI and CP Violation.”. **Invited** seminar at KIAS November 2020.
- [13] “CP Violation at Long-Baseline Neutrino Experiments.”  
<https://indico.bnl.gov/event/8008/>. Talk at BNL HET Group October 2020.
- [14] “CP Violation at Long-Baseline Neutrino Experiments.”  
<https://npc.fnal.gov/neutrino-seminar-series/>. **Invited** Neutrino Physics Center seminar October 2020 at Fermilab.
- [15] “The Lightest Dark Matter.”. **Invited** seminar October 2020 at University of Sussex.
- [16] “Astrophysical Neutrino Decay.”  
<https://indico.cern.ch/event/868940/contributions/3899680/>. Talk at ICHEP July 2020 in Prague (virtual).
- [17] “Visible Decay of Astrophysical Neutrinos.”  
<https://indico.bnl.gov/event/7985/>. Talk at BNL HET Group May 2020.
- [18] “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).
- [19] “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).

- [20] “LMA-Dark: Large New Physics Effects in Neutrino Oscillations.”  
<https://indico.bnl.gov/event/7665/>. Talk at BNL HET Group February 2020.
- [21] “Motivation for neutrino precision in oscillations.”  
<https://indico.bnl.gov/event/7282/>. **Invited** talk at BNL Snowmass Intensity Frontier & Astrophysics Workshop February 2020.
- [22] “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.
- [23] “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.
- [24] “Recent results in neutrino oscillation theory.”  
<https://physics.osu.edu/events/high-energy-physics-seminar-peter-dentonbrookhaven>  
**Invited** seminar at OSU November 2019.
- [25] “New physics probes in future neutrino experiments.”  
<https://indico.bnl.gov/event/6652/>. **Invited** colloquium at BNL October 2019.
- [26] “Recent results in neutrino oscillation theory.”  
<https://indico.cern.ch/event/800930/contributions/3557081/>. Talk at CERN Neutrino Platform October 2019.
- [27] “Neutrino theory in the coming years.” <https://indico.bnl.gov/event/6710/>.  
**Invited** talk at BNL Snowmass Discussion October 2019.
- [28] “Recent results in neutrino oscillation theory.”  
<https://theory.fnal.gov/events/event/tbd-neutrinos/>. **Invited** theory seminar at Fermilab September 2019.
- [29] “Exact neutrino oscillation probabilities in matter.”  
<https://indico.ific.uv.es/event/3649/contributions/11349/>. Talk given at TomFest at Vanderbilt August 2019.
- [30] “Neutrino oscillation probabilities in matter.”  
<https://indico.cern.ch/event/782953/contributions/3444777/>. Talk given at the 2019 DPF meeting at Northeastern July 2019.
- [31] “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.
- [32] “Partial neutrino decay resolves icecube’s track and cascade tension.”  
<https://indico.bnl.gov/event/5875/>. Talk at BNL HET Group May 2019.

- [33] “Neutrino Oscillation Probabilities in Matter.”  
<http://theory.physics.uci.edu/seminars.html>. **Invited** seminar at UC Irvine May 2019.
- [34] “Neutrino Oscillation Probabilities in Matter.”  
<http://www.theory.caltech.edu/people/carol/seminar.html>. Seminar at Caltech May 2019.
- [35] “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.
- [36] “Neutrino Oscillation Probabilities in Matter.”  
<https://www.phys.psu.edu/seminars/all-seminars>. **Invited** seminar at Penn State April 2019.
- [37] “Neutrino Oscillation Probabilities in Matter.”  
<https://www.phys.vt.edu/Talks/NeutrinoPhysicsSeminar.html>. **Invited** seminar at Virginia Tech February 2019.
- [38] “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.
- [39] “Finding the Unexpected in IceCube.”. **Invited** N-Talk at Niels Bohr International Academy September 2018 in Copenhagen.
- [40] “High Energy Neutrino Parameter Estimation.”. **Invited** talk at GRAND workshop at IAP August 2018.
- [41] “New Neutrino Interactions: Breaking Degeneracies and Relaxing Sterile Tensions.”. **Invited** seminar at BNL August 2018.
- [42] “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.
- [43] “Gamma Ray Bursts, Supernovae, Neutrinos, and IceCube.”. **Invited** talk at IIHE April 2018 in Brussels.
- [44] “Gamma Ray Bursts, Supernovae, Neutrinos, and IceCube.”. **Invited** talk at DESY January 2018 in Zeuthen.
- [45] “Gamma Ray Bursts, Supernovae, Neutrinos, and IceCube.”. **Invited** talk at Arizona State University January 2018.
- [46] “Supernova - Gamma Ray Burst - Neutrino Connection.”. **Invited** SUPER-STARs talk at DARK Cosmology Center November 2017 in Copenhagen.



- [47] “Gamma Ray Bursts, Supernovae, Neutrinos, and IceCube.”. **Invited** N-Talk at Niels Bohr International Academy November 2017 in Copenhagen.
- [48] “Analytic and compact perturbative expressions for neutrino oscillations in matter.”. **Invited** seminar at Campinas State University October 2017.
- [49] “COHERENT and the LMA-Dark NSI Solution.”  
<https://indico.uu.se/event/324/session/20/contribution/182>. **Invited** talk at the NUFACT 2017 workshop September 2017 in Uppsala.
- [50] “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.
- [51] “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.
- [52] “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.
- [53] “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.
- [54] “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.
- [55] “The Standard Neutrino Oscillation Parameters and a Surprising Alternative Solution.”. **Invited** N-Talk at Niels Bohr International Academy September 2016 in Copenhagen.
- [56] “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.
- [57] “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.
- [58] “Methods for Probing New Physics at High Energies.”  
<https://events.vanderbilt.edu/index.php?eID=90084>. Successful dissertation defense at Vanderbilt University June 2016 in Nashville, TN.



- [59] “Analytic and compact perturbative expressions for neutrino oscillations in matter.” <http://www.ccsem.infn.it/issp2016/index.html>. Talk at the International School of Subnuclear Physics May 2016 in Erice, Sicily.
- [60] “Analytic and compact perturbative expressions for neutrino oscillations in matter.” <https://indico.cern.ch/event/489180/contributions/2158195/>. Talk at Pheno May 2016 in Pittsburgh, PA.
- [61] “Cosmic Ray Anisotropy with Partial Sky Exposure.”. **Invited** seminar November 2015 at CCAPP.
- [62] “The Effect of a Maximum Lepton Energy on the Stability of Pions and Cosmic Ray Physics.” <http://meetings.aps.org/link/BAPS.2015.APR.M14.1>. Talk at the APS April meeting 2015 in Baltimore, MD.
- [63] “Particle Physics at the Highest Energies.”. **Invited** seminar December 2014 at the University of Wisconsin – Madison.
- [64] “Sensitivity of orbiting JEM-EUSO to large-scale cosmic-ray anisotropies.”. Talk at the Cosmic Ray Anisotropy Workshop September 2013 in Madison, WI.
- [65] “Using dispersion relations to look for new physics in pp elastic scattering at the LHC.” <http://meetings.aps.org/link/BAPS.2013.APR.H12.8>. Talk at the APS April meeting 2013 in Denver, CO.

## Notes

- [1] P. B. Denton, H. Minakata, and S. J. Parke, “Comment on 1801.10488v3,”. <https://zenodo.org/record/1177535>.

## Code

- [1] P. B. Denton, “Peterdenton/nu-pert-compare: v1.0.0,” Jan., 2019.  
<https://doi.org/10.5281/zenodo.2547029>.  
<https://github.com/PeterDenton/Nu-Pert-Compare>.
- [2] P. B. Denton, “ANA v1.0.0: Astrophysical Neutrino Anisotropy,” Mar., 2017.  
<https://doi.org/10.5281/zenodo.438675>.  
<https://github.com/PeterDenton/ANA>.
- [3] P. B. Denton, “Nu-Pert v0.2.2: Analytic and compact perturbative expressions for neutrino oscillations in matter,” June, 2016.  
<https://doi.org/10.5281/zenodo.54629>.  
<https://github.com/PeterDenton/Nu-Pert>.

## Miscellaneous

- [1] P. B. Denton\* *et al.*, “Neutrino Non-Standard Interactions.” Snowmass 2021: LOI, August, 2020.  
[https://www.snowmass21.org/docs/files/summaries/NF/SNOWMASS21-NF3\\_NF1-CF7\\_CF0-TF11\\_](https://www.snowmass21.org/docs/files/summaries/NF/SNOWMASS21-NF3_NF1-CF7_CF0-TF11_)  
\*Editor.
- [2] P. B. Denton\* and S. J. Parke, “Direct Probes of the Matter Effect in Neutrino Oscillations.” Snowmass 2021: LOI, August, 2020.  
[https://www.snowmass21.org/docs/files/summaries/NF/SNOWMASS21-NF1\\_NF3-TF0\\_TF0\\_Peter](https://www.snowmass21.org/docs/files/summaries/NF/SNOWMASS21-NF1_NF3-TF0_TF0_Peter)  
\*Editor.
- [3] M. Bustamante\*, P. B. Denton\*,  
S. Wissel\*, *et al.*, “Ultra-High-Energy Neutrinos.” Snowmass 2021: LOI, August, 2020.  
[https://www.snowmass21.org/docs/files/summaries/NF/SNOWMASS21-NF4\\_NF6-CF7\\_CF3-TF9\\_T](https://www.snowmass21.org/docs/files/summaries/NF/SNOWMASS21-NF4_NF6-CF7_CF3-TF9_T)  
\*Editor.
- [4] P. B. Denton\* *et al.*, “Computing Neutrino Oscillations in Matter Efficiently.”  
Snowmass 2021: LOI, July, 2020.  
<https://www.snowmass21.org/docs/files/summaries/NF/SNOWMASS21-NF8-CompF2-005.pdf>.  
\*Editor.
- [5] L. A. Anchordoqui, M. Bustamante, *et al.*, “Cosmic Neutrino Probes of Fundamental Physics.” Snowmass 2021: LOI, August, 2020.  
[https://www.snowmass21.org/docs/files/summaries/CF/SNOWMASS21-CF7\\_CF1-NF4\\_NF3-TF11\\_](https://www.snowmass21.org/docs/files/summaries/CF/SNOWMASS21-CF7_CF1-NF4_NF3-TF11_)
- [6] L. A. Anchordoqui *et al.*, “Syn-  
ergy of astro-particle physics and collider physics.” Snowmass 2021: LOI, August, 2020.  
[https://www.snowmass21.org/docs/files/summaries/CF/SNOWMASS21-CF7\\_CF0-EF6\\_EF7-NF5\\_N](https://www.snowmass21.org/docs/files/summaries/CF/SNOWMASS21-CF7_CF0-EF6_EF7-NF5_N)
- [7] D. Soldin *et al.*, “Studies of the Muon Excess in Cosmic Ray Air Showers.”  
Snowmass 2021: LOI, August, 2020.  
[https://www.snowmass21.org/docs/files/summaries/CF/SNOWMASS21-CF7\\_CF0-EF6\\_EF7-AF4\\_A](https://www.snowmass21.org/docs/files/summaries/CF/SNOWMASS21-CF7_CF0-EF6_EF7-AF4_A)
- [8] J. L. Feng, F. Kling, *et al.*, “Forward Physics Facility.” Snowmass 2021: LOI,  
August, 2020.  
[https://www.snowmass21.org/docs/files/summaries/EF/SNOWMASS21-EF9\\_EF6\\_EF10\\_EF5-NF6\\_](https://www.snowmass21.org/docs/files/summaries/EF/SNOWMASS21-EF9_EF6_EF10_EF5-NF6_)
- [9] L. Johns *et al.*, “Supernova neutrinos and particle-physics opportunities.” Snowmass  
2021: LOI, August, 2020.  
[https://www.snowmass21.org/docs/files/summaries/NF/SNOWMASS21-NF8\\_NF4-CF3\\_CF7-TF9\\_T](https://www.snowmass21.org/docs/files/summaries/NF/SNOWMASS21-NF8_NF4-CF3_CF7-TF9_T)
- [10] K. Scholberg *et al.*, “Neutrino Op-  
portunities at the ORNL Second Target Station.” Snowmass 2021: LOI, August, 2020.  
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