

Publications

Preprint Articles

- [1] S. Abel, L. Heurtier, *Exact Schwinger Proper Time Renormalisation*, Nov 2023 [ArXiv:2311.12102] **Submitted for publication to JHEP**
- [2] L. Hamaide, L. Heurtier, S.-Q. Hu, and A. Cheek, *Primordial Black Holes Are True Vacuum Nurseries*, Nov 2023 [ArXiv: 2311.01869] **Submitted for publication to PRL**
- [3] K. R. Dienes, L. Heurtier, F. Huang, T. M. P. Tait, and B. Thomas, *Stasis, Stasis, Triple Stasis*, Sep 2023 [ArXiv: 2309.10345] **Submitted for publication to PRD**
- [4] K. R. Dienes, L. Heurtier, F. Huang, D. Kim, T. M. P. Tait, and B. Thomas, *Primordial Black Holes Place the Universe in Stasis*, Dec 2022 [ArXiv:2212.01369] **Submitted for publication to PRD**

Peer Reviewed Journal Articles

- [1] A. Ghoshal, Y. Gouttenoire, L. Heurtier, P. Simakachorn, *Primordial Black Hole Archaeology with Gravitational Waves from Cosmic Strings*, Apr 2023, **J. High Energ. Phys.** 08 (2023) 196 [ArXiv:2304.04793]
- [2] R. Heighton, L. Heurtier, M. Spannowsky, *Hunting for Neutral Leptons with Ultra-High-Energy Cosmic Rays*, Mar 2023 [ArXiv:2303.11352] **Accepted for publication by PRD**
- [3] A. Cheek, L. Heurtier, Y. F. Perez-Gonzalez, and J. Turner, *Evaporation of Primordial Black Holes in the Early Universe: Mass and Spin Distributions*, Dec 2022 [ArXiv:2212.03878] **Accepted for publication by PRD**
- [4] L. Heurtier, A. Moursy, L. Wacquez, *Cosmological Imprints of SUSY Breaking in Models of Sgoldstinoless Non-Oscillatory Inflation*, Jul 2022, **JCAP** 03 (2023) 020 [ArXiv:2207.11502]
- [5] A. Ghoshal, L. Heurtier, A. Paul, *Signatures of Non-thermal Dark Matter with Kination and Early Matter Domination: Gravitational Waves versus Laboratory Searches*, Aug 2022, **J. High Energ. Phys.** 2022, 105 (2022) [ArXiv:2208.01670]
- [6] A. Cheek, L. Heurtier, Y. F. Perez-Gonzalez, J. Turner, *Redshift Effects in Particle Production from Kerr Primordial Black Holes*, Jul 2022, **Phys. Rev. D** 106 (2022) 10, 103012 [ArXiv:2207.09462]
- [7] K. R. Dienes, L. Heurtier, F. Huang, D. Kim, T.M.P. Tait, B. Thomas, *Stasis in an Expanding Universe: A Recipe for Stable Mixed-Component Cosmological Eras*, Nov 2021, **Phys. Rev. D** 105 (2022) 2, 023530, [arXiv:2111.04753].
- [8] A. Cheek, L. Heurtier, Y. F. Perez-Gonzalez, and J. Turner, *Primordial Black Hole Evaporation and Dark Matter Production: I. Solely Hawking radiation*, Jul 2021., **Phys. Rev. D** 105 (2022) 1, 015022, Jan. 2022 **PRD Editors' Suggestion** [arXiv:2107.00013].
- [9] A. Cheek, L. Heurtier, Y. F. Perez-Gonzalez, and J. Turner, *Primordial Black Hole Evaporation and Dark Matter Production: II. Interplay with the Freeze-In/Out Mechanism*, Jul 2021, **Phys. Rev. D** 105 (2022) 1, 015023 Jan. 2022 **PRD Editors' Suggestion**, [arXiv:2107.00016].
- [10] L. Heurtier, F. Huang, and T.M.P. Tait, *Resurrecting Low-Mass Axion Dark Matter Via a Dynamical QCD Scale*, Apr. 2021, **J. High Energ. Phys.** 12 (2021) 216, [arXiv:2104.13390].
- [11] L. Heurtier, H.-L. Li, H. Song, S. Su, W. Su, *Precision Higgs Couplings in Neutral Naturalness Models: an Effective Field Theory Approach*, Jul 2020. **J. High Energ. Phys.** 02 (2021) 234 [arXiv:2007.15021].
- [12] E. Dudas, L. Heurtier, K. Olive, M. Pierre, and Y. Mambrini, *A Model of Metastable EeV Dark Matter*, Mar 2020. **Phys. Rev. D** 101 (2020) 11, 115029 [arXiv:2003.02846].
- [13] L. Heurtier and H. Partouche, *Spontaneous Freeze Out of Dark Matter From an Early Thermal Phase Transition*, Dec 2019. **Phys. Rev. D** 101 (2020) 4, 043527, DOI:10.1103/PhysRevD.101.043527 [arXiv:1912.02828].
- [14] L. Heurtier, D. Kim, J. C. Park and S. Shin, *Explaining the ANITA Anomaly with Inelastic Boosted Dark Matter*, May 30, 2019. **Phys. Rev. D** 100 (2019) no.5, 055004, DOI: 10.1103/Phys-RevD.100.055004 [arXiv:1905.13223];

- [15] L. Heurtier and F. Huang, *The Inflaton Portal to a Highly decoupled EeV Dark Matter Particle*, May 13, 2019. **Phys. Rev. D** 100 (2019) no.4, 043507, DOI: 10.1103/PhysRevD.100.043507 [arXiv:1905.05191];
- [16] L. Heurtier, Y. Mambrini and M. Pierre, *Dark matter interpretation of the ANITA anomalous events*, Dec 2018. **Phys. Rev. D** 99, no. 9, 095014 (2019) [arXiv:1902.04584].
- [17] T. Coudarchet, L. Heurtier, H. Partouche, *Spontaneous dark-matter mass generation along cosmological attractors in string theory*, Dec 2018. **JHEP** 1903, 117 (2019) [arXiv:1812.10134].
- [18] L. Heurtier, *The Inflaton Portal to Dark Matter*, July 2017. **JHEP** 1712 (2017) 072 [arXiv:1707.08999].
- [19] R. Argurio, D. Coone, L. Heurtier, A. Mariotti, *Sgoldstino-less inflation and low energy SUSY breaking*, July 2016. **JCAP** 1707 (2017) no.07, 047 [arXiv:1705.06788].
- [20] T. E. Gonzalo, L. Heurtier, A. Moursy, *Sneutrino driven GUT Inflation in Supergravity*, Sept 2016. **JHEP** 1706 (2017) 109 [arXiv:1609.09396].
- [21] L. Heurtier, Y. Zhang, *Supernova Constraints on Massive (Pseudo)Scalar Coupling to Neutrinos*, Sept 2016. **JCAP** 1702 (2017) no.02, 042 [arXiv:1609.05882]
- [22] L. Heurtier, D. Teresi, *Dark matter and observable Lepton Flavour Violation*, July 2016. **Phys. Rev. D** 94 (2016) no.12, 125022 [arXiv:1607.01798]
- [23] E. Dudas, L. Heurtier, C. Wieck, M. Winkler, *UV Corrections in Sgoldstino-less Inflation*, Jan 2016. **Phys. Lett. B** 759 (2016) 121-125 [arXiv:1601.03397].
- [24] I. Bena, L. Heurtier, A. Puhm, *AdS3: the NHEK generation*, Oct, 2015. **JHEP** 1605 (2016) 120 [arXiv:1510.08055].
- [25] O. Ducu, L. Heurtier, J. Maurer, *LHC signatures of a Z' mediator between dark matter and the SU(3) sector*, Sept 2015. **J. High Energ. Phys.** 1603 (2016) 006 [arXiv:1509.05615].
- [26] L. Heurtier, S. Khalil, A. Moursy, *Single Field Inflation in Supergravity with a U(1) Gauge Symmetry*, May 27, 2015. **JCAP** 1510 (2015) no.10, 045 [arXiv:1505.07366].
- [27] W. Buchmüller, E. Dudas, L. Heurtier, A. Westphal, C. Wieck, M. W. Winkler, *Challenges for Large-Field Inflation and Moduli Stabilization*, Jan 23, 2015. **J. High Energ. Phys.** 1504 (2015) 058 [arXiv:1501.05812].
- [28] H. Erbin, L. Heurtier, *Supergravity, complex parameters and the Janis-Newman algorithm*, Jan 9, 2015. **Class. Quant. Grav.** 32 (2015) no.16, 165005 [arXiv:1501.02188].
- [29] H. Erbin, L. Heurtier, *Five-Dimensional Janis-Newman Algorithm*, Nov 7, 2014. **Class. Quant. Grav.** 32 (2015) no.16, 165004 [arXiv:1411.2030]
- [30] W. Buchmüller, E. Dudas, L. Heurtier and C. Wieck., *Large-Field Inflation and Supersymmetry Breaking*, Jul 1, 2014. **J. High Energ. Phys.** 1409 (2014) 053 [arXiv:1407.0253].
- [31] E. Dudas, L. Heurtier, Y. Mambrini, *Generating X-ray lines from annihilating dark matter*, Apr 7, 2014. **Phys. Rev. D** 90 (2014) 035002 [arXiv:1404.1927].
- [32] E. Dudas, M. Goodsell, L. Heurtier, P. Tziveloglou, *Flavour models with Dirac and fake gluinos*, Dec 6, 2013. **Nucl. Phys. B** 884 (2014) 632-671 [arXiv:1312.2011]
- [33] E. Dudas, L. Heurtier, Y. Mambrini, B. Zaldivar, *Extra U(1), effective operators, anomalies and dark matter*, Jun 28, 2013. **JHEP** 1311 (2013) 083 [arXiv:1307.0005]

Proceedings

- [1] T. Coudarchet, L. Heurtier, H. Partouche, *Spontaneous Freeze Out of Dark Matter*, Published in: **PoS CORFU2019** (2020) 136 - Contribution to: CORFU2019, 136. Dec 21, 2019 [arXiv:1912.10276]
- [2] L. Heurtier, *Extra U(1), effective operators, anomalies and dark matter*, Journées de Rencontre des Jeunes Chercheurs 2013: Proceedings.