

PUBLICATION LIST

My full listing on INSPIRE-HEP is available [here](#).

1. *Impact of substructure on local dark matter searches*
A. Ibarra, **B. J. Kavanagh**, A. Rappelt
[JCAP 12 \(2019\) 013](#), [arXiv:1908.00747](#)
2. *AEDGE: Atomic Experiment for Dark Matter and Gravity Exploration in Space*
Y. A. El-Neaj et al.
Submitted to EPJ Quantum Technology, [arXiv:1908.00802](#)
Signed as a supporting author
3. *Gravitational wave probes of dark matter: challenges and opportunities*
G. Bertone, D. Croon, M. A. Amin, K. K. Boddy, **B. J. Kavanagh**, K. J. Mack, P. Natarajan,
T. Opferkuch, K. Schutz, V. Takhistov, C. Weniger, T.-T. Yu
Submitted to SciPost Physics, [arXiv:1907.10610](#)
White paper on Dark Matter and Gravitational Waves
4. *Paleo-Detectors for Galactic Supernova Neutrinos*
S. Baum, T. D. P. Edwards, **B. J. Kavanagh**, P. Stengel, A. K. Drukier, K. Freese, M. Górski,
C. Weniger
Submitted to MNRAS, [arXiv:1906.05800](#)
Code available [here](#) (archived on [Zenodo](#))
5. *Discovery prospects of dwarf spheroidal galaxies for indirect dark matter searches*
S. Ando, **B. J. Kavanagh**, O. Macias, et al.
[JCAP 10 \(2019\) 040](#), [arXiv:1905.07128](#)
Completed as part of the [ITFA Amsterdam bachelors' workshop \(Jan 2019\)](#)
6. *A Unique Multi-Messenger Signal of QCD Axion Dark Matter*
T. D. P. Edwards, M. Chianese, **B. J. Kavanagh**, S. M. Nissanke, C. Weniger
Submitted to Phys. Rev. Lett., [arXiv:1905.04686](#)
7. *Primordial Black Holes as Silver Bullets for New Physics at the Weak Scale*
G. Bertone, A. Coogan, D. Gaggero, **B. J. Kavanagh**, C. Weniger
Submitted to Phys. Rev. Lett., [arXiv:1905.01238](#)
Code available [here](#) (archived on [Zenodo](#))
8. *Searching for low-mass dark matter particles with a massive Ge bolometer operated above-ground*
EDELWEISS Collaboration and **B. J. Kavanagh**
[Phys. Rev. D 99, 082003 \(2019\)](#), [arXiv:1901.03588](#)
9. *Digging for Dark Matter: Spectral Analysis and Discovery Potential of Paleo-Detectors*
T. D. P. Edwards, **B. J. Kavanagh**, C. Weniger, S. Baum, A. K. Drukier, K. Freese, M. Górski,
P. Stengel
[Phys. Rev. D 99, 043541 \(2019\)](#), [arXiv:1811.10549](#)
Code available [here](#) and [here](#) (archived on [Zenodo](#))
10. *Faint Light from Dark Matter: Classifying and Constraining Dark Matter-Photon Effective Operators*
B. J. Kavanagh, P. Panci, R. Ziegler
[J. High Energ. Phys. \(2019\) 2019: 89](#), [arXiv:1810.00033](#)
11. *Statistical challenges in the search for dark matter*
S. Algeri et al. (Editors: T. D. P. Edwards, **B. J. Kavanagh**, P. Scott, A. Vincent)
[arXiv:1807.09273](#)
12. *Bracketing the impact of astrophysical uncertainties on local dark matter searches*
A. Ibarra, **B. J. Kavanagh**, A. Rappelt
[JCAP 12 \(2018\) 018](#), [arXiv:1806.08714](#)

13. *Black holes, gravitational waves and fundamental physics: a roadmap*
 L. Barack et al. (**B. J. Kavanagh**, Section coordinator: “Primordial Black Holes and Dark Matter”)
[Class. Quantum Grav.](#) **36** 143001 (2019), [arXiv:1806.05195](#)
 White Paper for the COST action ”Gravitational Waves, Black Holes, and Fundamental Physics”
 Featured in [Physics World](#)
14. *Black Holes’ Dark Dress: On the merger rate of a subdominant population of primordial black holes*
B. J. Kavanagh, D. Gaggero, G. Bertone
[Phys. Rev. D](#) **98**, 023536 (2018), [arXiv:1805.09034](#)
 Code available [here](#) (archived on [Zenodo](#)), movies available [here](#)
15. *Dark Matter Model or Mass, but Not Both: Assessing Near-Future Direct Searches with Benchmark-free Forecasting*
 T. D. P. Edwards, **B. J. Kavanagh**, C. Weniger
[Phys. Rev. Lett.](#) **121**, 181101 (2018), [arXiv:1805.04117](#)
 Code available [here](#) and [here](#)
 Featured in [University of Amsterdam News](#)
16. *Prospects for exploring New Physics in Coherent Elastic Neutrino-Nucleus Scattering*
 J. Billard, J. Johnston, **B. J. Kavanagh**
[JCAP](#) **11** (2018) 016, [arXiv:1805.01798](#)
 Illustrative code available [here](#) (archived on [Zenodo](#))
17. *Precision constraints on radiative neutrino decay with CMB spectral distortion*
 J. L. Aalberts, S. Ando, W. M. Borg, E. Broeils, J. Broeils, S. Broeils, **B. J. Kavanagh**, G. Leguijt, M. Reemst, D. R. van Arneman, H. Vu
[Phys. Rev. D](#) **98**, 023001 (2018), [arXiv:1803.00588](#)
 Completed as part of the [ITFA Amsterdam bachelors’ workshop \(Jan 2018\)](#)
18. *Earth-Scattering of super-heavy Dark Matter: updated constraints from detectors old and new*
B. J. Kavanagh
[Phys. Rev. D](#) **97**, 123013 (2018), [arXiv:1712.04901](#)
 Code available [here](#)
19. *Time-integrated directional detection of dark matter*
 C. A. J. O’Hare, **B. J. Kavanagh**, A. M. Green
[Phys. Rev. D](#) **96**, 083011 (2017), [arXiv:1708.02959](#)
20. *Prospects for determining the particle/antiparticle nature of WIMP dark matter with direct detection experiments*
B. J. Kavanagh, F. S. Queiroz, W. Rodejohann, C. E. Yaguna
[J. High Energ. Phys.](#) (2017) 2017: 59, [arXiv:1706.07819](#)
 Code available [here](#)
21. *Probing Leptophilic Dark Sectors with Hadronic Processes*
 F. D’Eramo, **B. J. Kavanagh**, P. Panci
[Phys. Lett. B](#) **771** (2017) 339-348, [arXiv:1702.00016](#)
22. *Signatures of Earth-scattering in the direct detection of Dark Matter*
B. J. Kavanagh, R. Catena, C. Kouvaris
[JCAP](#) **01** (2017) 012, [arXiv:1611.05453](#)
 Code available [here](#)
23. *Reconstructing the three-dimensional local dark matter velocity distribution*
B. J. Kavanagh, C. A. J. O’Hare
[Phys. Rev. D](#) **94**, 123009 (2016), [arXiv:1609.08630](#)
24. *You can hide but you have to run: direct detection with vector mediators*
 F. D’Eramo, **B. J. Kavanagh**, P. Panci
[JHEP](#) **08** (2016) 111, [arXiv:1605.04917](#)
 Code available [here](#)

25. *A review of the discovery reach of directional Dark Matter detection*
F. Mayet, A. M. Green, J. B. R. Battat, J. Billard, N. Bozorgnia, G. B. Gelmini, P. Gondolo,
B. J. Kavanagh, S. K. Lee, D. Loomba J. Monroe, B. Morgan, C. A. J. O'Hare, A. H. G. Peter,
N. S. Phan, S. E. Vahsen
[Physics Reports 627 \(2016\) 1](#), [arXiv:1602.03781](#)
Highlighted in [Physics Reports](#)
26. *Re-examining the significance of the 750 GeV diphoton excess at ATLAS*
B. J. Kavanagh
arXiv pre-print (2016), [arXiv:1601.07330](#)
Featured on [Symmetries](#) and [Résonances](#)
27. *New directional signatures from the non-relativistic effective field theory of dark matter*
B. J. Kavanagh
[Phys. Rev. D 92, 023513 \(2015\)](#), [arXiv:1505.07406](#)
28. *Discretising the velocity distribution for directional dark matter experiments*
B. J. Kavanagh
[JCAP 07 \(2015\) 019](#), [arXiv:1502.04224](#)
29. *Probing WIMP particle physics and astrophysics with direct detection and neutrino telescope data*
B. J. Kavanagh, M. Fornasa, A. M. Green
[Phys. Rev. D. 91, 103533 \(2015\)](#), [arXiv:1410.8051](#)
30. *Parametrizing the local dark matter speed distribution: a detailed analysis*
B. J. Kavanagh
[Phys. Rev. D 89, 085026 \(2014\)](#), [arXiv:1312.1852](#)
31. *WIMP physics with ensembles of direct-detection experiments*
A. H. G. Peter, V. Gluscevic, A. M. Green, **B. J. Kavanagh**, S. K. Lee
[Phys. Dark Universe 5-6 \(2014\) 45-74](#), [arXiv:1310.7039](#)
32. *Model independent determination of the dark matter mass from direct detection experiments*
B. J. Kavanagh and A. M. Green
[Phys. Rev. Lett. 111, 031302 \(2013\)](#), [arXiv:1303.6868](#)
Featured in [Phys.org](#)
33. *Improved determination of the WIMP mass from direct detection data*
B. J. Kavanagh and A. M. Green
[Phys. Rev. D 86, 065027 \(2012\)](#), [arXiv:1207.2039](#)