

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
Submitted to JCAP, [arXiv:1908.00747](#)
2. *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](#))
3. *Discovery prospects of dwarf spheroidal galaxies for indirect dark matter searches*
S. Ando, **B. J. Kavanagh**, O. Macias, et al.
Submitted to JCAP, [arXiv:1905.07128](#)
Completed as part of the ITFA Amsterdam bachelors' workshop (Jan 2019)
4. *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](#)
5. *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](#))
6. *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](#)
7. *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](#))
8. *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](#)
9. *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](#)
10. *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](#)
11. *Black holes, gravitational waves and fundamental physics: a roadmap*
L. Barack et al. (**B. J. Kavanagh**, Section coordinator: "Primordial Black Holes and Dark Matter")
Submitted to Physics Reports, [arXiv:1806.05195](#)
White Paper for the COST action "Gravitational Waves, Black Holes, and Fundamental Physics".

12. *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](#)
13. *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](#)
14. *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](#))
15. *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 Arneeman, H. Vu
[Phys. Rev. D 98, 023001 \(2018\)](#), [arXiv:1803.00588](#)
 Completed as part of the [ITFA Amsterdam bachelors' workshop \(Jan 2018\)](#)
16. *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](#)
17. *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](#)
18. *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](#)
19. *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](#)
20. *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](#)
21. *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](#)
22. *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](#)
23. *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](#)

24. *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](#)
25. *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](#)
26. *Discretising the velocity distribution for directional dark matter experiments*
B. J. Kavanagh
[JCAP 07 \(2015\) 019](#), [arXiv:1502.04224](#)
27. *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](#)
28. *Parametrizing the local dark matter speed distribution: a detailed analysis*
B. J. Kavanagh
[Phys. Rev. D 89, 085026 \(2014\)](#), [arXiv:1312.1852](#)
29. *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](#)
30. *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](#)
31. *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](#)