

## PUBLICATION LIST

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

1. *Detecting dark matter around black holes with gravitational waves: Effects of dark-matter dynamics on the gravitational waveform*  
**B. J. Kavanagh**, D. A. Nichols, G. Bertone, D. Gaggero  
arXiv pre-print, [arXiv:2002.12811](#)  
Code available [here](#) (archived on [Zenodo](#)), movies available [here](#)
2. *Impact of substructure on local dark matter searches*  
A. Ibarra, **B. J. Kavanagh**, A. Rappelt  
[JCAP 12 \(2019\) 013](#), [arXiv:1908.00747](#)
3. *AEDGE: Atomic Experiment for Dark Matter and Gravity Exploration in Space*  
Y. A. El-Neaj et al.  
[EPJ Quantum Technology 7, 6 \(2020\)](#), [arXiv:1908.00802](#)  
Signed as a supporting author
4. *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
5. *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](#))
6. *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 \(Jan 2019\)](#)
7. *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](#)
8. *Primordial Black Holes as Silver Bullets for New Physics at the Weak Scale*  
G. Bertone, A. Coogan, D. Gaggero, **B. J. Kavanagh**, C. Weniger  
[Phys. Rev. D 100, 123013 \(2019\)](#), [arXiv:1905.01238](#)  
Code available [here](#) (archived on [Zenodo](#))
9. *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](#)
10. *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](#))
11. *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](#)
12. *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](#)

13. *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](#)
14. *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](#)
15. *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](#)
16. *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](#)
17. *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](#))
18. *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 \(Jan 2018\)](#)
19. *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](#)
20. *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](#)
21. *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](#)
22. *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](#)
23. *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](#)
24. *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](#)

25. *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](#)
26. *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](#)
27. *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](#)
28. *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](#)
29. *Discretising the velocity distribution for directional dark matter experiments*  
**B. J. Kavanagh**  
[JCAP 07 \(2015\) 019](#), [arXiv:1502.04224](#)
30. *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](#)
31. *Parametrizing the local dark matter speed distribution: a detailed analysis*  
**B. J. Kavanagh**  
[Phys. Rev. D 89, 085026 \(2014\)](#), [arXiv:1312.1852](#)
32. *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](#)
33. *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](#)
34. *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](#)