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
   Phys. Rev. D 100, 123013 (2019), 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 at 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
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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
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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