# Kevin Thieme's Publications

## Corresponding or Lead Author

1. DarkSide-20k Collaboration, F. Acerbi et al., *Flow and thermal modelling of the argon volume in the DarkSide-20k TPC*, JINST **20** P06046 (2025) [arXiv:2503.08468].
2. DarkSide-20k Collaboration, F. Acerbi et al., *Benchmarking the design of the cryogenics system for the underground argon in DarkSide-20k*, JINST **20** P02016 (2025) [arXiv:2408.14071].
3. Laura Baudis, Patricia Sanchez-Lucas and Kevin Thieme, *A measurement of the mean electronic excitation energy of liquid xenon*, Eur. Phys. J. C **81** 1060 (2021) [arXiv:2109.07151].
4. Kevin Thieme, *DARWIN – a next-generation liquid xenon observatory for dark matter and neutrino physics*, in Proceedings of 37th International Cosmic Ray Conference PoS(ICRC2021), vol. 395, p. 548, 2021.
5. L. Baudis, Y. Biondi, M. Galloway, F. Girard, A. Manfredini, N. McFadden, R. Peres, P. Sanchez-Lucas and K. Thieme, *Design and construction of Xenoscope – a full-scale vertical demonstrator for the DARWIN observatory*, JINST **16** P08052 (2021) [arXiv:2105.13829].
6. Kevin Thieme, *Null Lagrangians of non-local field theories*, no journal submission, arXiv:2009.13499 (2020).
7. L. Baudis, Y. Biondi, M. Galloway, F. Girard, S. Hochrein, S. Reichard, P. Sanchez-Lucas, K. Thieme and J. Wulf, *The first dual-phase xenon TPC equipped with silicon photomultipliers and characterisation with $^{37}Ar$*, Eur. Phys. J. C **80** 477 (2020) [arXiv:2003.01731].

## Co-Author

8. V. Gupta, G. R. Araujo, M. Babicz, L. Baudis, P.-J. Chiu, S. Choudhary, M. Goldbrunner, A. Hamer, M. Kuźniak, M. Kuzwa, A. Leonhardt, E. Montagna, G. Nieradka, H. B. Parkinson, F. Pietropaolo, T. Pollmann, F. Resnati, S. Schönert, A. Szelc, K. Thieme and M. Walczak, *Demonstration of the light collection stability of a PEN-based wavelength shifting reflector in a tonne scale liquid argon detector*, JINST **20** C05033 (2025) [arXiv:2411.17934].
9. L. Baudis, Y. Biondi, A. Bismark, A. P. Cimental Chavez, J. J. Cuenca-Garcia, J. Franchi, M. Galloway, F. Girard, R. Peres, D. Ramirez Garcia, P. Sanchez-Lucas, K. Thieme and C. Wittweg, *Electron transport measurements in liquid xenon with Xenoscope, a large-scale DARWIN demonstrator*, Eur. Phys. J. C **83** 717 (2023) [arXiv.2303.13963].

## Collaboration Author

10. DarkSide-20k Collaboration, F. Acerbi et al., *Quality assurance and quality control of the 26 $m^2$ SiPM production for the DarkSide-20k dark matter experiment*, Eur. Phys. J. C **85** 534 (2025) [arXiv:2412.18867].
11. DarkSide-20k Collaboration, F. Acerbi et al., *DarkSide-20k sensitivity to light dark matter particles*, Commun. Phys. **7** 422 (2024) [arXiv:2407.05813].
12. DarkSide-20k Collaboration, F. Acerbi et al., *A new hybrid gadolinium nanoparticles-loaded polymeric material for neutron detection in rare event searches*, JINST **19** P09021 (2024) [arXiv:2404.18492].
13. DarkSide-20k Collaboration, P. Agnes et al., *Constraints on directionality effect of nuclear recoils in a liquid argon time projection chamber*, Eur. Phys. J. C **84** 24 (2024) [arXiv:2307.15454].
14. DarkSide-20k Collaboration, E. Aaron et al., *Study of cosmogenic activation above ground for the DarkSide-20k experiment*, Astropart. Phys. **152** 102878 (2023) [arXiv:2301.12970].
15. DarkSide-20k Collaboration, E. Aaron et al., *Measurement of isotopic separation of argon with the prototype of the cryogenic distillation plant Aria for dark matter searches*, Eur. Phys. J. C **83** 453 (2023) [arXiv:2301.09639].
16. Global Argon Dark Matter Collaboration, P. Agnes et al., *Sensitivity projections for a dual-phase argon TPC optimized for light dark matter searches through the ionization channel*, Phys. Rev. D **107** 112006 [arXiv:2209.01177].
17. DARWIN Collaboration, L. Althueser et al., *GPU-based optical simulation of the DARWIN detector*, JINST **17** P07018 (2022) [arXiv:2203.14354].

18. J. Aalbers et al., *A Next-Generation Liquid Xenon Observatory for Dark Matter and Neutrino Physics*, J. Phys. G: Nucl. Part. Phys. **50** 013001 (2022) [arXiv:2203.02309].

19. DARWIN Collaboration, J. Aalbers et al., *Solar neutrino detection sensitivity in DARWIN via electron scattering*, Eur. Phys. J. C **80** 1133 (2020) [arXiv:2006.03114].

20. DARWIN Collaboration, F. Agostini et al., *Sensitivity of the DARWIN observatory to the neutrinoless double beta decay of $^{136}Xe$*, Eur. Phys. J. C **80** 808 (2020) [arXiv:2003.13407].

## PhD Thesis

21. Kevin Thieme, *The Low-Energy and Large-Scale Frontier of Dual-Phase Xenon Time Projection Chambers for Dark Matter Search*, PhD Thesis, University of Zurich (2022).

## Invention

22. Kevin Thieme, Frédéric Girard (University of Zurich) *Mehrteilige Lagervorrichtung und Stützsegment*, German utility model (DE 20 2021 101 412 U1) (2022).