

# PUBLICATION LIST

- [1] B. Hertzsch, **J. Feldbrugge**, Maé Rodriguez and Rien van de Weygaert, “A New Recipe for Caustic Pancakes: On the Reality of Walls in the Cosmic Web”, *JCAP* (2025) (R & R), [arXiv:2510.02419](#) [quant-ph]
- [2] **J. Feldbrugge** and U-L Pen, “The real-time Feynman path integral for step potentials”, *Physical Review D* (2025) (R & R), [arXiv:2508.17578](#) [quant-ph]
- [3] **J. Feldbrugge** and J. Y. L. Jones, “Efficient evaluation of real-time path integrals”, *Physical Review D* (2025) Volume 111. [arXiv:2501.16323](#) [quant-ph]
- [4] B. Bonga, **J. Feldbrugge** and A. Metidieri, “Wave optics for rotating stars”, *Physical Review D* (2024) Volume 111, Issue 6.. [arXiv:2410.03828](#) [astro-ph.CO]
- [5] **J. Feldbrugge** and R. van de Weygaert, “What makes a cosmic filament? The dynamical origin and identity of filaments I. fundamentals in 2D”, *Monthly Notices of the Royal Astronomical Society* (2024, Accepted). [arXiv:2405.20475](#) [astro-ph.CO]
- [6] **J. Feldbrugge**, “Phase-Space Delaunay Tessellation Field Estimator”, *Monthly Notices of the Royal Astronomical Society* (2025) nr. 1, 536. [arXiv:2402.16234](#) [astro-ph.CO]
- [7] **J. Feldbrugge**, D. L. Jow, U.-L. Pen, “Crossing singularities in the saddle point approximation”, *Physical Review Letters* (2023, R&R). [arXiv:2309.12427](#) [quant-ph]
- [8] **J. Feldbrugge**, D. L. Jow, U.-L. Pen, “Complex classical paths in quantum reflections and tunneling”, *Physical Review D* (2025) Volume 111, Issue 8, id.085027, 29 pp.. [arXiv:2309.12420](#) [quant-ph]
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- [10] **J. Feldbrugge**, “Complex evaluation of angular power spectra: Going beyond the Limber approximation”, *Physical Review D* (2023) nr. 108, 103007. [arXiv:2304.13064](#) [astro-ph.CO]
- [11] **J. Feldbrugge**, Y. Yan, and R. van de Weygaert, “Statistics of tidal and deformation eigenvalue fields in the primordial Gaussian matter distribution: the two-dimensional case”, *Monthly Notices of the Royal Astronomical Society* (2023, R&R). [arXiv:2301.07200](#) [astro-ph.CO]
- [12] **J. Feldbrugge**, and R. van de Weygaert, “Cosmic web & caustic skeleton: non-linear constrained realizations - 2D case studies”, *Journal of Cosmology and Astroparticle Physics* (2013) no.2, 58. [arXiv:2212.07840](#) [astro-ph.CO]
- [13] **J. Feldbrugge**, U.-L. Pen, and N. Turok, “Oscillatory path integrals for radio astronomy,” *Annals of Physics* (2023) no.451, 169255. [arXiv:1909.04632](#) [astro-ph.HE]
- [14] **J. Feldbrugge**, “Multi-plane lensing in wave optics,” *Monthly Notices of the Royal Astronomical Society* (2023) nr.250, 2995-3006. [arXiv:2010.03089](#) [astro-ph.CO]

- [15] **J. Feldbrugge**, and N. Turok, “Existence of real time quantum path integrals”, *Annals of Physics* (2023, R&R) [arXiv:2207.12798](#) [hep-th]
- [16] D. Jow, U.-L. Pen, and **J. Feldbrugge**, “Regimes in astrophysical lensing: refractive optics, diffractive optics, and the Fresnel scale”, *Monthly Notices of the Royal Astronomical Society* (2022). [arXiv:2204.12004](#) [astro-ph.CO]
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- [18] **J. Feldbrugge** and N. Turok, “Gravitational lensing of binary systems in wave optics,” *Physical Review Letters* (2020, R&R). [arXiv:2008.01154](#) [gr-qc]
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- [27] **J. Feldbrugge**, J. Hidding, and R. van de Weygaert “Statistics of caustics in large-scale structure formation,” *The Zeldovich Universe: Genesis and Growth of the Cosmic Web, Proceedings of the International Astronomical Union, IAU Symposium*, 308 (2016), 107–114. [arXiv:1412.5121](#) [astro-ph.CO]

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- [32] **J. Feldbrugge** and M. van Engelen, “Analysis of Betti numbers and persistence diagrams of two-dimensional Gaussian random fields,” Bachelor thesis, University of Groningen, supervised by R. van de Weygaert, E. Pallante, G. Vegter (2012). [Available online.](#)