

# List of publications

Florent Leclercq

[www.florent-leclercq.eu](http://www.florent-leclercq.eu)

31 January 2023

## Refereed Journal Articles

19. *Field-Based Physical Inference From Peculiar Velocity Tracers*  
J. Prideaux-Ghee, [F. Leclercq](#), G. Lavaux, A. Heavens, J. Jache  
*MNRAS* **518**, 4191 (2023), [arXiv:2204.00023](#) [astro-ph.CO] (citations: **3**)
18. *An intergalactic medium temperature from a giant radio galaxy*  
M. S. S. L. Oei, R. J. van Weeren, M. J. Hardcastle, F. Vazza, T. W. Shimwell, [F. Leclercq](#),  
M. Brüggen, H. J. A. Röttgering  
*MNRAS* **518**, 240 (2023), [arXiv:2210.10156](#) [astro-ph.GA]
17. *Filamentary Baryons and Where to Find Them: A forecast of synchrotron radiation from merger and accretion shocks in the local Cosmic Web*  
M. S. S. L. Oei, R. J. van Weeren, F. Vazza, [F. Leclercq](#), A. Gopinath, H. J. A. Röttgering  
*A&A* **662**, A87 (2022), [arXiv:2203.05365](#) [astro-ph.CO] (citation: **1**)
16. *Kernel-Based Emulator for the 3D Matter Power Spectrum from CLASS*  
A. Mootooyaloo, A. H. Jaffe, A. F. Heavens, [F. Leclercq](#)  
*Astronomy and Computing* **38**, 100508 (2022), [arXiv:2105.02256](#) [astro-ph.CO] (citations: **9**)
15. *On the accuracy and precision of correlation functions and field-level inference in cosmology*  
[F. Leclercq](#), A. Heavens  
*MNRAS Letters* **506**, L85 (2021), [arXiv:2103.04158](#) [astro-ph.CO] (citations: **10**)
14. *Velocity debiasing for Hubble constant measurements from standard sirens*  
S. Mukherjee, G. Lavaux, F. R. Bouchet, J. Jasche, B. D. Wandelt, S. M. Nissanke,  
[F. Leclercq](#), K. Hotokezaka  
*A&A* **646**, A65 (2020), [arXiv:1909.08627](#) [astro-ph.CO] (citations: **60**)
13. *Parameter Inference for Weak Lensing using Gaussian Processes and MOPED*  
A. Mootooyaloo, A. F. Heavens, A. H. Jaffe, [F. Leclercq](#)  
*MNRAS* **497**, 2213 (2020), [arXiv:2005.06551](#) [astro-ph.CO] (citations: **14**)
12. *Perfectly parallel cosmological simulations using spatial comoving Lagrangian acceleration*  
[F. Leclercq](#), B. Faure, G. Lavaux, B. D. Wandelt, A. H. Jaffe, A. F. Heavens, W. J. Percival,  
C. Noûs  
*A&A* **639**, A91 (2020), [arXiv:2003.04925](#) [astro-ph.CO] (citations: **8**)
11. *Primordial power spectrum and cosmology from black-box galaxy surveys*  
[F. Leclercq](#), W. Enzi, J. Jasche, A. Heavens  
*MNRAS* **490**, 4237 (2019), [arXiv:1902.10149](#) [astro-ph.CO] (citations: **14**)
10. *Bayesian optimisation for likelihood-free cosmological inference*  
[F. Leclercq](#)  
*Physical Review D* **98**, 063511 (2018), [arXiv:1805.07152](#) [astro-ph.CO] (citations: **35**)
9. *The phase-space structure of nearby dark matter as constrained by the SDSS*  
[F. Leclercq](#), J. Jasche, G. Lavaux, B. Wandelt, W. Percival  
*JCAP* **6**, 49 (2017), [arXiv:1601.00093](#) [astro-ph.CO] (citations: **17**)
8. *Cosmological N-body simulations including radiation perturbations*  
J. Brandbyge, C. Rampf, T. Tram, [F. Leclercq](#), C. Fidler, S. Hannestad  
*MNRAS Letters* **466**, L68 (2017), [arXiv:1610.04236](#) [astro-ph.CO] (citations: **28**)

7. *Comparing cosmic web classifiers using information theory*  
[F. Leclercq](#), G. Lavaux, J. Jasche, B. Wandelt  
[JCAP 8, 27 \(2016\)](#), [arXiv:1606.06758 \[astro-ph.CO\]](#) (citations: **14**)
6. *Cosmic web-type classification using decision theory*  
[F. Leclercq](#), J. Jasche, B. Wandelt  
[A&A Letters 576, L17 \(2015\)](#), [arXiv:1503.00730 \[astro-ph.CO\]](#) (citations: **20**)
5. *Bayesian analysis of the dynamic cosmic web in the SDSS galaxy survey*  
[F. Leclercq](#), J. Jasche, B. Wandelt  
[JCAP 6, 15 \(2015\)](#), [arXiv:1502.02690 \[astro-ph.CO\]](#) (citations: **44**)
4. *Dark matter voids in the SDSS galaxy survey*  
[F. Leclercq](#), J. Jasche, P. M. Sutter, N. Hamaus, B. Wandelt  
[JCAP 3, 47 \(2015\)](#), [arXiv:1410.0355 \[astro-ph.CO\]](#) (citations: **35**)
3. *Past and present cosmic structure in the SDSS DR7 main sample*  
 J. Jasche, [F. Leclercq](#), B. D. Wandelt  
[JCAP 1, 36 \(2015\)](#), [arXiv:1409.6308 \[astro-ph.CO\]](#) (citations: **71**)
2. *One-point remapping of Lagrangian perturbation theory in the mildly non-linear regime of cosmic structure formation*  
[F. Leclercq](#), J. Jasche, H. Gil-Marín, B. Wandelt  
[JCAP 11, 48 \(2013\)](#), [arXiv:1305.4642 \[astro-ph.CO\]](#) (citations: **32**)
1. *Main Sequence Stars with Asymmetric Dark Matter*  
 F. Iocco, M. Taoso, [F. Leclercq](#), G. Meynet  
[Physical Review Letters 108, 061301 \(2012\)](#), [arXiv:1201.5387 \[astro-ph.SR\]](#) (citations: **44**)
- Other Refereed Publications**
2. *Rubin-Euclid Derived Data Products: Initial Recommendations*  
 L. P. Guy, J. C. Cuillandre, *et al.* (120 authors)  
[Zenodo, 5836022 \(2022\)](#), [arXiv:2201.03862 \[astro-ph.IM\]](#) (citations: **3**)
1. *One-point statistics of the Lagrangian displacement field*  
 Addendum to *One-point remapping of Lagrangian perturbation theory in the mildly non-linear regime of cosmic structure formation*  
[F. Leclercq](#), J. Jasche, B. Wandelt  
[JCAP 4, 26 \(2015\)](#), [arXiv:1507.08664 \[astro-ph.CO\]](#) (citations: **2**)
- Submitted Articles**
2. *Higher-order statistics of the large-scale structure from photometric redshifts*  
 E. Tsaprazi, J. Jasche, G. Lavaux, [F. Leclercq](#)  
[arXiv:2301.03581 \[astro-ph.CO\]](#)
1. *Systematic-free inference of the cosmic matter density field from SDSS3-BOSS data*  
 G. Lavaux, J. Jasche, [F. Leclercq](#)  
[arXiv:1909.06396 \[astro-ph.CO\]](#) (citations: **31**)
- Conference Proceedings**
5. *Simulation-based inference of Bayesian hierarchical models while checking for model misspecification*  
[F. Leclercq](#)  
 Proceedings of the 41st International Conference on Bayesian and Maximum Entropy methods in Science and Engineering (MaxEnt2022), 18-22 July 2022, Paris, France  
[doi:10.3390/psf2022005004](#), [arXiv:2209.11057 \[stat.ME\]](#)
4. *Probabilistic cartography of the large-scale structure*  
[F. Leclercq](#), J. Jasche, G. Lavaux, B. Wandelt  
 Proceedings of the “Rencontres du Vietnam” 2015, Cosmology 50 years after CMB discovery, 16-22 August 2015, Quy Nhon, Vietnam  
[arXiv:1512.02242 \[astro-ph.CO\]](#) (citations: **3**)

**3.** *Bayesian inference of the initial conditions from large-scale structure surveys*[F. Leclercq](#)

Proceedings of the IAU Symposium 308, “The Zel’dovich Universe: Genesis and Growth of the Cosmic Web”, 23-28 June 2014, Tallinn, Estonia

doi:10.1017/S1743921316009984, arXiv:1410.2271 [astro-ph.CO]

**2.** *Bayesian large-scale structure inference: initial conditions and the cosmic web*[F. Leclercq](#), B. Wandelt

Proceedings of the IAU Symposium 306, “Statistical Challenges in 21st Cosmology”, 25-29 May 2014, Lisbon, Portugal

doi:10.1017/S1743921314011120, arXiv:1410.1546 [astro-ph.CO] (citations: **2**)**1.** *Bayesian inference of dark matter voids in galaxy surveys*[F. Leclercq](#)

Proceedings of the “Rencontres de Moriond”, Cosmology session 2014, 22-29 March 2014, La Thuile, Italy

arXiv:1410.0865 [astro-ph.CO]

**Book Chapters****1.** *Cosmology: from theory to data, from data to theory*[F. Leclercq](#), A. Pisani, B. Wandelt

Lectures given at the International School of Physics Enrico Fermi “New Horizons for Observational Cosmology”, June 30-July 6, 2013, Varenna, Italy

doi:10.3254/978-1-61499-476-3-189, arXiv:1403.1260 [astro-ph.CO] (citations: **4**)**PhD Thesis***Bayesian large-scale structure inference and cosmic web analysis*[F. Leclercq](#)

Institut d’Astrophysique de Paris, 2015

tel-01265548, arXiv:1512.04985 [astro-ph.CO] (citations: **11**)**Blog articles****3.** *Simulating the Universe on a mobile phone*[F. Leclercq](#), G. Lavaux25-05-2020, [Personal website](#) · [Aquila Consortium website](#)**2.** *Evolution of cosmological simulations over the last 50 years*[F. Leclercq](#)08-04-2020, [Personal website](#) · Repository: [GitHub:florent-leclercq/Moore\\_low\\_cosmosims](#)**1.** *Algorithms for likelihood-free cosmological data analysis*[F. Leclercq](#)25-04-2019, [Personal website](#) · [Aquila Consortium website](#)**Public Data and Codes****3.** *pySELF*Python implementation of the *Simulator Expansion for Likelihood-Free Inference* (SELF) algorithm.[F. Leclercq](#)doi:10.5281/zenodo.3341588, [GitHub:florent-leclercq/pyself](#),<http://pyself.florent-leclercq.eu>**2.** *SIMBELMYNĚ*

A hierarchical probabilistic simulator to generate synthetic galaxy survey data

[F. Leclercq](#)

Additional contributions from: B. Faure, M. M. Ali Mohamed

[BitBucket:florent-leclercq/simbelmyne](#), <http://simbelmyne.florent-leclercq.eu>**1.** *The BORG SDSS data release*

Public release of data products following the BORG SDSS analysis

[F. Leclercq](#), J. Jasche, B. Wandelt

Additional contributions from: N. Hamaus, G. Lavaux, P. M. Sutter

doi:10.5281/zenodo.1455729, [GitHub:florent-leclercq/borg\\_sdss\\_data\\_release](#),<http://data.florent-leclercq.eu>

Source of citation counts: [NASA ADS](#), 31 January 2023.