

PUBLICATIONS

Michele Mancarella

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Author-order conventions. Some publications in theoretical cosmology use alphabetical author order; these are marked with **A**. First-author papers and selected papers where I played a lead role (original ideas, software implementation, analysis, writing, coordination) are marked with *****.

Metrics and summary

Scope	Papers	Preprints	Citations	h-index
All	84 (INSPIRE)	24 (INSPIRE)	7,301 (INSPIRE)	38 (INSPIRE)
Non-collaboration	37 (INSPIRE)	1 (INSPIRE)	2,026 (INSPIRE)	23 (INSPIRE)
Collaboration	47 (INSPIRE)	23 (INSPIRE)	5,275 (INSPIRE)	25 (INSPIRE)

Preprints are included in the paper totals. Collaboration breakdown: 47 papers – LVK 40; ET 4; LISA 2; other 1.

Papers on peer-reviewed journals

- [36*] Agapito, A., De Renzi, V., **Mancarella, M.**, “Gravitational-wave constraints on H_0 are robust to putative redshift evolution in the binary black hole mass spectrum at current sensitivity”. In: *Phys.Rev.D* 114.6 (2026), p. 063503. DOI: [10.1103/jk7y-ddyb](https://doi.org/10.1103/jk7y-ddyb). arXiv: [2605.20112](https://arxiv.org/abs/2605.20112).
- [35] Tagliazucchi, M., Moresco, M., Agapito, A., **Mancarella, M.**, Ferraiuolo, S., Mastrogiovanni, S., Borghi, N., Pannarale, F., Bonacorsi, D., “Pushing spectral siren cosmology into the third-generation era: A blinded mock data challenge”. In: *Astron.Astrophys.* 711 (2026), A120. DOI: [10.1051/0004-6361/202659517](https://doi.org/10.1051/0004-6361/202659517). arXiv: [2602.17756](https://arxiv.org/abs/2602.17756).
- [34] Borhanian, S., Renzini, A., Cole, P. S., Pacilio, C., **Mancarella, M.**, Gerosa, D., “Impact of facility timing and coordination for next-generation gravitational-wave detectors”. In: *Class.Quant.Grav.* 43.8 (2026), p. 085008. DOI: [10.1088/1361-6382/ae5b1a](https://doi.org/10.1088/1361-6382/ae5b1a). arXiv: [2510.11861](https://arxiv.org/abs/2510.11861).
- [33*] Pedrotti, A., **Mancarella, M.**, Bel, J., Santoni, M., Gerosa, D., “Cosmology with the angular cross-correlation of gravitational-wave and galaxy catalogs: Forecasts for next-generation interferometers and the Euclid survey”. In: *Astron.Astrophys.* 712 (2026), A37. DOI: [10.1051/0004-6361/202557264](https://doi.org/10.1051/0004-6361/202557264). arXiv: [2504.10482](https://arxiv.org/abs/2504.10482).
- [32] Colombo, A., Salafia, O. S., Ghirlanda, G., Iacovelli, F., **Mancarella, M.**, Broekgaarden, F. S., Nava, L., Giacomazzo, B., Colpi, M., “Multi-messenger observations in the Einstein Telescope era: Binary neutron star and black hole–neutron star mergers”. In: *Astron.Astrophys.* 704 (2025), A260. DOI: [10.1051/0004-6361/202554326](https://doi.org/10.1051/0004-6361/202554326). arXiv: [2503.00116](https://arxiv.org/abs/2503.00116).
- [31*] **Mancarella, M.**, Gerosa, D., “Sampling the full hierarchical population posterior distribution in gravitational-wave astronomy”. In: *Phys.Rev.D* 111.10 (2025), p. 103012. DOI: [10.1103/PhysRevD.111.103012](https://doi.org/10.1103/PhysRevD.111.103012). arXiv: [2502.12156](https://arxiv.org/abs/2502.12156).
- [30] Maggiore, M., Iacovelli, F., Belgacem, E., **Mancarella, M.**, Muttoni, N., “Comparison of global networks of third-generation gravitational-wave detectors”. In: *Class.Quant.Grav.* 42.21 (2025), p. 215004. DOI: [10.1088/1361-6382/ae110b](https://doi.org/10.1088/1361-6382/ae110b). arXiv: [2411.05754](https://arxiv.org/abs/2411.05754).
- [29A] Belgacem, E., Iacovelli, F., Maggiore, M., **Mancarella, M.**, Muttoni, N., “The spectral density of astrophysical stochastic backgrounds”. In: *JCAP* 04 (2025), p. 032. DOI: [10.1088/1475-7516/2025/04/032](https://doi.org/10.1088/1475-7516/2025/04/032). arXiv: [2411.04028](https://arxiv.org/abs/2411.04028).

- [28A] Belgacem, E., Iacovelli, F., Maggiore, M., **Mancarella, M.**, Muttoni, N., “Confusion noise from astrophysical backgrounds at third-generation gravitational-wave detector networks”. In: *Phys.Rev.D* 112.8 (2025), p. 083007. DOI: [10.1103/mr25-ftqd](https://doi.org/10.1103/mr25-ftqd). arXiv: [2411.04029](https://arxiv.org/abs/2411.04029).
- [27] De Renzi, V., Iacovelli, F., Gerosa, D., **Mancarella, M.**, Pacilio, C., “Forecasting the population properties of merging black holes”. In: *Phys.Rev.D* 111.4 (2025), p. 044048. DOI: [10.1103/PhysRevD.111.044048](https://doi.org/10.1103/PhysRevD.111.044048). arXiv: [2410.17325](https://arxiv.org/abs/2410.17325).
- [26] Iacovelli, F., Belgacem, E., Maggiore, M., **Mancarella, M.**, Muttoni, N., “Combining underground and on-surface third-generation gravitational-wave interferometers”. In: *JCAP* 10 (2024), p. 085. DOI: [10.1088/1475-7516/2024/10/085](https://doi.org/10.1088/1475-7516/2024/10/085). arXiv: [2408.14946](https://arxiv.org/abs/2408.14946).
- [25*] **Mancarella, M.**, Iacovelli, F., Foffa, S., Muttoni, N., Maggiore, M., “Accurate Standard Siren Cosmology with Joint Gravitational-Wave and γ -Ray Burst Observations”. In: *Phys.Rev.Lett.* 133.26 (2024), p. 261001. DOI: [10.1103/PhysRevLett.133.261001](https://doi.org/10.1103/PhysRevLett.133.261001). arXiv: [2405.02286](https://arxiv.org/abs/2405.02286).
- [24] Borghi, N., **Mancarella, M.**, Moresco, M., Tagliazucchi, M., Iacovelli, F., Cimatti, A., Maggiore, M., “Cosmology and Astrophysics with Standard Sirens and Galaxy Catalogs in View of Future Gravitational Wave Observations”. In: *Astrophys.J.* 964.2 (2024), p. 191. DOI: [10.3847/1538-4357/ad20eb](https://doi.org/10.3847/1538-4357/ad20eb). arXiv: [2312.05302](https://arxiv.org/abs/2312.05302).
- [23*] Castello, S., **Mancarella, M.**, Grimm, N., Sobral-Blanco, D., Tutusaus, I., Bonvin, C., “Gravitational redshift constraints on the effective theory of interacting dark energy”. In: *JCAP* 05 (2024), p. 003. DOI: [10.1088/1475-7516/2024/05/003](https://doi.org/10.1088/1475-7516/2024/05/003). arXiv: [2311.14425](https://arxiv.org/abs/2311.14425).
- [22] Colombo, A., Duqué, R., Salafia, O. S., Broekgaarden, F. S., Iacovelli, F., **Mancarella, M.**, Andreoni, I., Gabrielli, F., Ragosta, F., Ghirlanda, G., Fragos, T., Levan, A. J., Piranomonte, S., Melandri, A., Giacomazzo, B., Colpi, M., “Multi-messenger prospects for black hole - neutron star mergers in the O4 and O5 runs”. In: *Astron.Astrophys.* 686 (2024), A265. DOI: [10.1051/0004-6361/202348384](https://doi.org/10.1051/0004-6361/202348384). arXiv: [2310.16894](https://arxiv.org/abs/2310.16894).
- [21] Iacovelli, F., **Mancarella, M.**, Mondal, C., Puecher, A., Dietrich, T., Gulminelli, F., Maggiore, M., Oertel, M., “Nuclear physics constraints from binary neutron star mergers in the Einstein Telescope era”. In: *Phys.Rev.D* 108.12 (2023), p. 122006. DOI: [10.1103/PhysRevD.108.122006](https://doi.org/10.1103/PhysRevD.108.122006). arXiv: [2308.12378](https://arxiv.org/abs/2308.12378).
- [20] Franciolini, G., Iacovelli, F., **Mancarella, M.**, Maggiore, M., Pani, P., Riotto, A., “Searching for primordial black holes with the Einstein Telescope: Impact of design and systematics”. In: *Phys.Rev.D* 108.4 (2023), p. 043506. DOI: [10.1103/PhysRevD.108.043506](https://doi.org/10.1103/PhysRevD.108.043506). arXiv: [2304.03160](https://arxiv.org/abs/2304.03160).
- [19*] **Mancarella, M.**, Iacovelli, F., Gerosa, D., “Inferring, not just detecting: Metrics for high-redshift sources observed with third-generation gravitational-wave detectors”. In: *Phys.Rev.D* 107.10 (2023), p. L101302. DOI: [10.1103/PhysRevD.107.L101302](https://doi.org/10.1103/PhysRevD.107.L101302). arXiv: [2303.16323](https://arxiv.org/abs/2303.16323).
- [18] Kole, M., Iacovelli, F., **Mancarella, M.**, Produit, N., “Adding gamma-ray polarimetry to the multi-messenger era - Prospects of joint gravitational-wave and gamma-ray polarimetry studies”. In: *Astron.Astrophys.* 669 (2023), A77. DOI: [10.1051/0004-6361/202245205](https://doi.org/10.1051/0004-6361/202245205). arXiv: [2211.12403](https://arxiv.org/abs/2211.12403).
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- [16] Iacovelli, F., **Mancarella, M.**, Foffa, S., Maggiore, M., “GWFAST: A Fisher Information Matrix Python Code for Third-generation Gravitational-wave Detectors”. In: *Astrophys.J.Supp.* 263.1 (2022), p. 2. DOI: [10.3847/1538-4365/ac9129](https://doi.org/10.3847/1538-4365/ac9129). arXiv: [2207.06910](https://arxiv.org/abs/2207.06910).
- [15*] **Mancarella, M.**, Genoud-Prachex, E., Maggiore, M., “Cosmology and modified gravitational wave propagation from binary black hole population models”. In: *Phys.Rev.D* 105.6 (2022), p. 064030. DOI: [10.1103/PhysRevD.105.064030](https://doi.org/10.1103/PhysRevD.105.064030). arXiv: [2112.05728](https://arxiv.org/abs/2112.05728).
- [14A] Finke, A., Foffa, S., Iacovelli, F., Maggiore, M., **Mancarella, M.**, “Modified gravitational wave propagation and the binary neutron star mass function”. In: *Phys.Dark Univ.* 36 (2022), p. 100994. DOI: [10.1016/j.dark.2022.100994](https://doi.org/10.1016/j.dark.2022.100994). arXiv: [2108.04065](https://arxiv.org/abs/2108.04065).

- [13A] Finke, A., Foffa, S., Iacovelli, F., Maggiore, M., **Mancarella, M.**, “Probing modified gravitational wave propagation with strongly lensed coalescing binaries”. In: *Phys.Rev.D* 104.8 (2021), p. 084057. DOI: [10.1103/PhysRevD.104.084057](https://doi.org/10.1103/PhysRevD.104.084057). arXiv: [2107.05046](https://arxiv.org/abs/2107.05046).
- [12*] Finke, A., Foffa, S., Iacovelli, F., Maggiore, M., **Mancarella, M.**, “Cosmology with LIGO/Virgo dark sirens: Hubble parameter and modified gravitational wave propagation”. In: *JCAP* 08 (2021), p. 026. DOI: [10.1088/1475-7516/2021/08/026](https://doi.org/10.1088/1475-7516/2021/08/026). arXiv: [2101.12660](https://arxiv.org/abs/2101.12660).
- [11*] **Mancarella, M.**, Kennedy, J., Bose, B., Lombriser, L., “Seeking new physics in cosmology with Bayesian neural networks: Dark energy and modified gravity”. In: *Phys.Rev.D* 105.2 (2022), p. 023531. DOI: [10.1103/PhysRevD.105.023531](https://doi.org/10.1103/PhysRevD.105.023531). arXiv: [2012.03992](https://arxiv.org/abs/2012.03992).
- [10A] Lampo, A., **Mancarella, M.**, Piga, A., *(Non)-neutrality of science and algorithms: Machine Learning between fundamental physics and society*. 2020. DOI: [10.13131/1724-451x.labsquarterly.axx.n4.117-145](https://doi.org/10.13131/1724-451x.labsquarterly.axx.n4.117-145). arXiv: [2006.10745](https://arxiv.org/abs/2006.10745).
- [9A] Langlois, D., **Mancarella, M.**, Noui, K., Vernizzi, F., “Mimetic gravity as DHOST theories”. In: *JCAP* 02 (2019), p. 036. DOI: [10.1088/1475-7516/2019/02/036](https://doi.org/10.1088/1475-7516/2019/02/036). arXiv: [1802.03394](https://arxiv.org/abs/1802.03394).
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- [7A] Belgacem, E., Cusin, G., Foffa, S., Maggiore, M., **Mancarella, M.**, “Stability issues of nonlocal gravity during primordial inflation”. In: *Int.J.Mod.Phys.A* 33.1 (2018), p. 1850007. DOI: [10.1142/S0217751X18500070](https://doi.org/10.1142/S0217751X18500070). arXiv: [1610.05664](https://arxiv.org/abs/1610.05664).
- [6*] D’Amico, G., Huang, Z., **Mancarella, M.**, Vernizzi, F., “Weakening Gravity on Redshift-Survey Scales with Kinetic Matter Mixing”. In: *JCAP* 02 (2017), p. 014. DOI: [10.1088/1475-7516/2017/02/014](https://doi.org/10.1088/1475-7516/2017/02/014). arXiv: [1609.01272](https://arxiv.org/abs/1609.01272).
- [5A] Cusin, G., Foffa, S., Maggiore, M., **Mancarella, M.**, “Conformal symmetry and nonlinear extensions of nonlocal gravity”. In: *Phys.Rev.D* 93.8 (2016), p. 083008. DOI: [10.1103/PhysRevD.93.083008](https://doi.org/10.1103/PhysRevD.93.083008). arXiv: [1602.01078](https://arxiv.org/abs/1602.01078).
- [4A] Cusin, G., Foffa, S., Maggiore, M., **Mancarella, M.**, “Nonlocal gravity with a Weyl-square term”. In: *Phys.Rev.D* 93.4 (2016), p. 043006. DOI: [10.1103/PhysRevD.93.043006](https://doi.org/10.1103/PhysRevD.93.043006). arXiv: [1512.06373](https://arxiv.org/abs/1512.06373).
- [3*] Gleyzes, J., Langlois, D., **Mancarella, M.**, Vernizzi, F., “Effective Theory of Dark Energy at Redshift Survey Scales”. In: *JCAP* 02 (2016), p. 056. DOI: [10.1088/1475-7516/2016/02/056](https://doi.org/10.1088/1475-7516/2016/02/056). arXiv: [1509.02191](https://arxiv.org/abs/1509.02191).
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- [1*] Maggiore, M., **Mancarella, M.**, “Nonlocal gravity and dark energy”. In: *Phys.Rev.D* 90.2 (2014), p. 023005. DOI: [10.1103/PhysRevD.90.023005](https://doi.org/10.1103/PhysRevD.90.023005). arXiv: [1402.0448](https://arxiv.org/abs/1402.0448).

Preprints / under review

- [1] Nanadoumgar-Lacroze, D., Muttoni, N., Maggiore, M., **Mancarella, M.**, *Cosmology and modified GW propagation from the BNS mass function at third-generation detector networks*. 2026. arXiv: [2603.19377](https://arxiv.org/abs/2603.19377).

LIGO-Virgo-KAGRA collaboration papers with substantial contribution

- [2] Abac, A., et al. (incl. **Mancarella, M.**), *GWTC-5.0: Constraints on the Cosmic Expansion Rate and Modified Gravitational-wave Propagation*. 2026. arXiv: [2605.27227](https://arxiv.org/abs/2605.27227).
- [1] Abac, A., et al. (incl. **Mancarella, M.**), “GWTC-4.0: Constraints on the Cosmic Expansion Rate and Modified Gravitational-wave Propagation”. In: *Astrophys.J.Lett.* 1007.1 (2026), p. L17. DOI: [10.3847/2041-8213/ae69dd](https://doi.org/10.3847/2041-8213/ae69dd). arXiv: [2509.04348](https://arxiv.org/abs/2509.04348).

Einstein Telescope collaboration papers with substantial contribution

- [3] Dupletsa, U., et al. (incl. **Mancarella, M.**), *Assessing the Impact of Instrumental Requirements on the Scientific Performance of the Einstein Telescope*. 2026. arXiv: [2607.27311](#).
- [2A] Abac, A., et al. (incl. **Mancarella, M.**), “The Science of the Einstein Telescope”. In: *JCAP* 03 (2026), p. 081. DOI: [10.1088/1475-7516/2026/03/081](#). arXiv: [2503.12263](#).
- [1] Branchesi, M., et al. (incl. **Mancarella, M.**), “Science with the Einstein Telescope: a comparison of different designs”. In: *JCAP* 07 (2023), p. 068. DOI: [10.1088/1475-7516/2023/07/068](#). arXiv: [2303.15923](#).

LISA collaboration papers

- [2A] Arun, K., et al. (incl. **Mancarella, M.**), “New horizons for fundamental physics with LISA”. In: *Living Rev.Rel.* 25.1 (2022), p. 4. DOI: [10.1007/s41114-022-00036-9](#). arXiv: [2205.01597](#).
- [1A] Auclair, P., et al. (incl. **Mancarella, M.**), “Cosmology with the Laser Interferometer Space Antenna”. In: *Living Rev.Rel.* 26.1 (2023), p. 5. DOI: [10.1007/s41114-023-00045-2](#). arXiv: [2204.05434](#).

Other collaboration papers

- [1A] Ajith, P., et al. (incl. **Mancarella, M.**), “The Lunar Gravitational-wave Antenna: mission studies and science case”. In: *JCAP* 01 (2025), p. 108. DOI: [10.1088/1475-7516/2025/01/108](#). arXiv: [2404.09181](#).

Other Einstein Telescope collaboration papers

- [1] Ricciardone, A., et al. (incl. **Mancarella, M.**), *Probing Cosmic Expansion and Early Universe with Einstein Telescope*. 2026. arXiv: [2601.06017](#).

Other LIGO-Virgo-KAGRA collaboration papers

- [38] Abac, A., et al. (incl. **Mancarella, M.**), *Updated Upper Limits on the Isotropic Gravitational-Wave Background from LIGO, Virgo, and KAGRA Data through April 2025*. 2026. arXiv: [2608.23477](#).
- [37] Abac, A., et al. (incl. **Mancarella, M.**), *Constraints on ultralight bosons from merging binary and remnant black holes observed during the second and third parts of the fourth LIGO-Virgo-KAGRA observing run*. 2026. arXiv: [2608.11620](#).
- [36] Acernese, F., et al. (incl. **Mancarella, M.**), *Advanced Virgo during the LIGO-Virgo-KAGRA fourth observing run*. 2026. arXiv: [2607.26872](#).
- [35] Acernese, F., et al. (incl. **Mancarella, M.**), *Calibration of the Advanced Virgo+ Gravitational Wave Detector and Reconstruction of the Detector Strain $h(t)$ during the Observing Run O4*. 2026. arXiv: [2607.19273](#).
- [34] Abac, A., et al. (incl. **Mancarella, M.**), *GWTC-5.0: Tests of General Relativity*. 2026. arXiv: [2607.19293](#).
- [33] Abac, A., et al. (incl. **Mancarella, M.**), *Sub-Torque-Balance Upper Limits on Continuous Gravitational Waves from Scorpius X-1*. 2026. arXiv: [2607.07765](#).
- [32] Abac, A., et al. (incl. **Mancarella, M.**), *Open Data from LIGO, Virgo, and KAGRA through the Second Part of the Fourth Observing Run*. 2026. arXiv: [2605.27090](#).
- [31] Abac, A., et al. (incl. **Mancarella, M.**), *GWTC-5.0: Observations from the Second Part of the Fourth LIGO-Virgo-KAGRA Observing Run and Updates to the Gravitational-Wave Transient Catalog*. 2026. arXiv: [2605.27225](#).

- [30] Abac, A., et al. (incl. **Mancarella, M.**), *GWTC-5.0: Population Properties of Merging Compact Binaries*. 2026. arXiv: [2605.27226](#).
- [29] Abac, A., et al. (incl. **Mancarella, M.**), *GWTC-5.0: Methods for Identifying and Characterizing Gravitational-wave Transients*. 2026. arXiv: [2605.27224](#).
- [28] Abac, A., et al. (incl. **Mancarella, M.**), *GWTC-5.0: An Introduction to Version 5.0 of the Gravitational-Wave Transient Catalog*. 2026. arXiv: [2605.27223](#).
- [27] Abac, A., et al. (incl. **Mancarella, M.**), *Searches for Binary Mergers with Sub-solar Mass Components in Data from the First Part of LIGO–Virgo–KAGRA’s Fourth Observing Run*. 2026. arXiv: [2605.05444](#).
- [26] Abac, A., et al. (incl. **Mancarella, M.**), “GW240925 and GW250207: Astrophysical Calibration of Gravitational Wave Detectors”. In: *Phys.Rev.Lett.* 137.7 (2026), p. 071401. DOI: [10.1103/gzrj-mwv3](#). arXiv: [2605.11703](#).
- [25] Abac, A., et al. (incl. **Mancarella, M.**), “Searches for Continuous Gravitational Waves from Supernova Remnants in the First Part of the LIGO–Virgo–KAGRA Fourth Observing Run”. In: *Astrophys.J.* 1004.2 (2026), p. 204. DOI: [10.3847/1538-4357/ae6263](#). arXiv: [2603.25808](#).
- [24] Abac, A., et al. (incl. **Mancarella, M.**), “Narrowband Searches for Continuous Gravitational Waves from known Pulsars in the First Two Parts of the Fourth LIGO–Virgo–KAGRA Observing Run”. In: *Astrophys.J.* 1005.2 (2026), p. 221. DOI: [10.3847/1538-4357/ae77fc](#). arXiv: [2603.25938](#).
- [23] Acernese, F., et al. (incl. **Mancarella, M.**), *Advanced Virgo Plus for O5 – Design Report Overview*. 2026. arXiv: [2603.20342](#).
- [22] Abac, A., et al. (incl. **Mancarella, M.**), *GWTC-4.0: Tests of General Relativity. III. Tests of the Remnants*. 2026. arXiv: [2603.19021](#).
- [21] Abac, A., et al. (incl. **Mancarella, M.**), *GWTC-4.0: Tests of General Relativity. I. Overview and General Tests*. 2026. arXiv: [2603.19019](#).
- [20] Abac, A., et al. (incl. **Mancarella, M.**), *GWTC-4.0: Tests of General Relativity. II. Parameterized Tests*. 2026. arXiv: [2603.19020](#).
- [19] Abac, A., et al. (incl. **Mancarella, M.**), *All-sky Searches for Continuous Gravitational Waves from Isolated Neutron Stars in the Data from the First Part of the Fourth LIGO–Virgo–KAGRA Observing Run*. 2026. arXiv: [2603.14168](#).
- [18] Abac, A., et al. (incl. **Mancarella, M.**), “Constraints on Gravitational Waves from the 2024 Vela Pulsar Glitch”. In: *Astrophys.J.* 1005.1 (2026), p. 12. DOI: [10.3847/1538-4357/ae63bc](#). arXiv: [2512.17990](#).
- [17] Abac, A., et al. (incl. **Mancarella, M.**), *GWTC-4.0: Searches for Gravitational-Wave Lensing Signatures*. 2025. arXiv: [2512.16347](#).
- [16] Abac, A., et al. (incl. **Mancarella, M.**), “Search for planetary-mass ultracompact binaries using data from the first part of the LIGO–Virgo–KAGRA fourth observing run”. In: *Phys.Rev.D* 114.2 (2026), p. 022005. DOI: [10.1103/s551-7pch](#). arXiv: [2511.19911](#).
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