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List of Publications

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Pre-prints

- [P-3] M. Benini, M. Perin, A. Schenkel, *Smooth 1-dimensional algebraic quantum field theories*, Oct 2020, preprint [arXiv:2010.13808](#) [math-ph].
- [P-2] M. Benini, A. Schenkel, B. Vicedo, *Homotopical analysis of 4d Chern-Simons theory and integrable field theories*, Aug 2020, preprint [arXiv:2008.018297](#) [hep-th].
- [P-1] M. Benini, M. Perin, A. Schenkel, L. Woike, *Categorification of algebraic quantum field theories*, Mar 2020, preprint [arXiv:2003.13713](#) [math-ph].

Articles on peer-reviewed journals

- [A-20] M. Benini, A. Schenkel, L. Woike, *Operads for algebraic quantum field theory*, **Commun. Contemp. Math.** 23:2 (2021) 2050007, DOI: 10.1142/S0219199720500078, [arXiv:1709.08657](#) [math-ph].
- [A-19] M. Benini, S. Bruinsma, A. Schenkel, *Linear Yang-Mills theory as a homotopy AQFT*, **Commun. Math. Phys.** 378:1 (2020) 185, DOI: 10.1007/s00220-019-03640-z, [arXiv:1906.00999](#) [math-ph].
- [A-18] M. Benini, M. Perin, A. Schenkel, *Model-independent comparison between factorization algebras and algebraic quantum field theory on Lorentzian manifolds*, **Commun. Math. Phys.** 377:2 (2020) 971, DOI: 10.1007/s00220-019-03561-x, [arXiv:1903.03396](#) [math-ph].
- [A-17] M. Benini, A. Schenkel, L. Woike, *Involutive categories, colored *-operads and quantum field theory*, **Theory Appl. Categ.** 34:2 (2019) 13, [arXiv:1802.09555](#) [math.CT].
- [A-16] M. Benini, A. Schenkel, L. Woike, *Homotopy theory of algebraic quantum field theories*, **Lett. Math. Phys.** 109:7 (2019) 1487, DOI: 10.1007/s11005-018-01151-x, [arXiv:1805.08795](#) [math-ph].
- [A-15] C. Becker, M. Benini, A. Schenkel, R. J. Szabo, *Cheeger-Simons differential characters with compact support and Pontryagin duality*, **Commun. Anal. Geom.** 27:7 (2019) 1473, DOI: 10.4310/CAG.2019.v27.n7.a2, [arXiv:1511.00324](#) [math-ph].
- [A-14] M. Benini, C. Dappiaggi, A. Schenkel, *Algebraic quantum field theory on spacetimes with timelike boundary*, **Ann. Henri Poincaré** 19:8 (2018) 2401, DOI: 10.1007/s00023-018-0687-1, [arXiv:1712.06686](#) [math-ph].
- [A-13] M. Benini, A. Schenkel, U. Schreiber, *The stack of Yang-Mills fields on Lorentzian manifolds*, **Commun. Math. Phys.** 359:2 (2018) 765, DOI: 10.1007/s00220-018-3120-1, [arXiv:1704.01378](#) [math-ph].
- [A-12] M. Benini, A. Schenkel, *Quantum field theories on categories fibered in groupoids*, **Commun. Math. Phys.** 356:1 (2017) 19, DOI: 10.1007/s00220-017-2986-7, [arXiv:1610.06071](#) [math-ph].
- [A-11] M. Benini, M. Capoferri, C. Dappiaggi, *Hadamard states for quantum Abelian duality*, **Ann. Henri Poincaré** 18:10 (2017) 3325, DOI: 10.1007/s00023-017-0593-y, [arXiv:1611.10282](#) [math-ph].

- [A-10] M. Benini, A. Schenkel, *Poisson algebras for non-linear field theories in the Cahiers topos*, **Ann. Henri Poincaré** 18:4 (2017) 1435, DOI: 10.1007/s00023-016-0533-2, arXiv:1602.00708 [math-ph].
- [A-9] C. Becker, M. Benini, A. Schenkel, R. J. Szabo, *Abelian duality on globally hyperbolic spacetimes*, **Commun. Math. Phys.** 349:1 (2017) 361, DOI: 10.1007/s00220-016-2669-9, arXiv:1511.00316 [math-ph].
- [A-8] M. Benini, A. Schenkel, R. J. Szabo, *Homotopy colimits and global observables in Abelian gauge theory*, **Lett. Math. Phys.** 105:9 (2015) 1193, DOI: 10.1007/s11005-015-0765-y, arXiv:1503.08839 [math-ph].
- [A-7] M. Benini, *Optimal space of linear classical observables for Maxwell k -forms via spacelike and timelike compact de Rham cohomologies*, **J. Math. Phys.** 57:5 (2016) 053502, DOI: 10.1063/1.4947563, arXiv:1401.7563 [math-ph].
- [A-6] M. Benini, *Relative Cauchy evolution for the vector potential on globally hyperbolic spacetimes*, **Mathematics and Mechanics of Complex Systems** 3:2 (2015) 177, DOI: 10.2140/mem-ocs.2015.3.177.
- [A-5] M. Benini, C. Dappiaggi, S. Murro, *Radiative observables for linearized gravity on asymptotically flat spacetimes and their boundary induced states*, **J. Math. Phys.** 55:8 (2014) 082301, DOI: 10.1063/1.4890581, arXiv: 1404.4551 [gr-qc].
- [A-4] M. Benini, C. Dappiaggi, T.-P. Hack, A. Schenkel, *A C^* -algebra for quantized principal $U(1)$ -connections on globally hyperbolic Lorentzian manifolds*, **Commun. Math. Phys.** 332:1 (2014) 477, DOI: 10.1007/s00220-014-2100-3, arXiv:1307.3052 [math-ph].
- [A-3] M. Benini, C. Dappiaggi, A. Schenkel, *Quantized Abelian principal connections on Lorentzian manifolds*, **Commun. Math. Phys.** 330:1 (2014) 123, DOI: 10.1007/s00220-014-1917-0, arXiv:1303.2515 [math-ph].
- [A-2] M. Benini, C. Dappiaggi, T.-P. Hack, *Quantum field theory on curved backgrounds – A primer*, **Int. J. Mod. Phys. A** 17:28 (2013) 1330023, DOI: 10.1142/S0217751X13300238, arXiv:1306.0527 [gr-qc].
- [A-1] M. Benini, C. Dappiaggi, A. Schenkel, *Quantum field theory on affine bundles*, **Ann. Henri Poincaré** 15:1 (2014) 171, DOI: 10.1007/s00023-013-0234-z, arXiv:1210.3457 [math-ph].

Book contributions

- [B-1] M. Benini, C. Dappiaggi, *Models of free quantum field theories on curved backgrounds*, in **Advances in Algebraic Quantum Field Theory**, eds. R. Brunetti, C. Dappiaggi, K. Fredenhagen, J. Yngvason, Springer (2015), DOI: 10.1007/978-3-319-21353-8_3, arXiv:1505.04298 [math-ph].

Conference proceedings

- [C-2] M. Benini, A. Schenkel, *Higher structures in algebraic quantum field theory*, Proceedings of the LMS-EPSRC Durham symposium “Higher structures in M-theory”, 12-18 Aug 2018, **Fortschritte der Physik** 67:8-9 (2019) 1910015, DOI: 10.1002/prop.201910015, arXiv:1903.02878 [math-ph].
- [C-1] M. Benini, K. Rejzner, A. Schenkel, C. Schweigert, Book of abstracts for the mini-workshop “New interactions between homotopical algebra and quantum field theory”, 18-23 Dec 2016, **Oberwolfach Rep.** 13:4 (2016) 3261, DOI: 10.4171/OWR/2016/58.

Theses

- [T-2] M. Benini, *Locality in Abelian gauge theories over globally hyperbolic spacetimes*, tesi di dottorato, University of Pavia, Nov 2014, ISBN 978-88-95767-78-9, [arXiv:1503.00131](#) [math-ph].
- [T-1] M. Benini, *Relative Cauchy evolution for spin 1 fields*, tesi di laurea magistrale, University of Pavia, Oct 2011, [arXiv:1111.6471](#) [math-ph].