

# List of Publications

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## 1 Publications in peer reviewed journals

1. *Coulomb scattering in the massless Nelson model III. Ground state wave functions and non-commutative recurrence relations.* Accepted for publication in Ann. Henri Poincaré. [arXiv:1704.02924](#).  
(with A. Pizzo).
2. *From Faddeev-Kulish to LSZ. Towards a non-perturbative description of colliding electrons.* Accepted for publication in Nuclear Physics B. [arXiv:1706.09057](#).
3. *Asymptotic observables in gapped quantum spin systems.* Accepted for publication in Commun. Math. Phys. [arXiv:1608.08750](#).
4. *Compton scattering in the Buchholz-Roberts framework of relativistic QED.* Lett. Math. Phys. **107**, 81–106, (2017) [arXiv:1509.03997](#).  
(with S. Alazzawi).
5. *Lieb-Robinson bounds, Arveson spectrum and Haag-Ruelle scattering theory for gapped quantum spin systems.* Ann. Henri Poincaré **17**, 1737–1791 (2016) [arXiv:1412.2970](#).  
(with S. Bachmann and P. Naaijken).
6. *The translation invariant massive Nelson model: III. Asymptotic completeness below the two-boson threshold.* Ann. Henri Poincaré **16**, 2603–2693 (2015) [arXiv:1210.6645](#).  
(with J.S. Møller).
7. *Coulomb scattering in the massless Nelson model I. Foundations of two-electron scattering.* J. Stat. Phys. **154**, 543–587 (2014) [arXiv:1302.5001](#).  
(with A. Pizzo).
8. *A criterion for asymptotic completeness in local relativistic QFT.* Commun. Math. Phys. **332**, 1167–1202 (2014) [arXiv:1308.5187](#).  
(with C. Gérard).
9. *Towards asymptotic completeness of two-particle scattering in local relativistic QFT.* Commun. Math. Phys. **326**, 81–109 (2014) [arXiv:1211.3393](#).  
(with C. Gérard).
10. *Asymptotic completeness for infraparticles in two-dimensional conformal field theory.* Lett. Math. Phys. **103**, 1223–1241 (2013) [arXiv:1112.4102](#).  
(with Y. Tanimoto).
11. *Infraparticles with superselected direction of motion in two-dimensional conformal field theory.* Commun. Math. Phys. **311**, 457–490 (2012) [arXiv:1101.5700](#).  
(with Y. Tanimoto).

12. *Asymptotic completeness in a class of massless relativistic quantum field theories.*  
Commun. Math. Phys. **305**, 427–440 (2011) arXiv:1006.5430.  
(with Y. Tanimoto).
13. *Towards a construction of inclusive collision cross-sections in the massless Nelson model.*  
Ann. Henri Poincaré **13**, 1427–1449 (2012) arXiv:1104.4265.
14. *Continuous spectrum of automorphism groups and the infraparticle problem.*  
Commun. Math. Phys. **300**, 273–299 (2010) arXiv:0912.2013.
15. *Coincidence arrangements of local observables and uniqueness of the vacuum in QFT.*  
J. Phys. A **42**, 365201–365223 (2009) arXiv:0905.2050.
16. *A sharpened nuclearity condition for massless fields.*  
Lett. Math. Phys. **84**, 217–230 (2008) arXiv:0803.1468.
17. *A sharpened nuclearity condition and the uniqueness of the vacuum in QFT.*  
Commun. Math. Phys. **283**, 523–542 (2008) arXiv:0706.4049.
18. *Theory of a two-level artificial molecule in laterally coupled quantum Hall droplets.*  
Phys. Rev. B **73**, 075314–075319 (2006) arXiv:cond-mat/0509585.  
(with R.M. Abolfach and P. Hawrylak).
19. *Two electrons in a strongly coupled double quantum dot: from an artificial helium atom to a hydrogen molecule.* Phys. Rev. B **72**, 205432–205441 (2005). arXiv:cond-mat/0502161.  
(with P. Hawrylak).
20. *Haag-Ruelle scattering theory in presence of massless particles.*  
Lett. Math. Phys. **72**, 27–38 (2005) arXiv:hep-th/0412226.

## 2 Preprints

1. *Coulomb scattering in the massless Nelson model II. Regularity of ground states.*  
arXiv:1302.5012.  
(with A. Pizzo).

## 3 Theses

1. *Spectral theory of automorphism groups and particle structures in quantum field theory.*  
PhD Thesis, University of Göttingen, (2009). Advisor: D. Buchholz.
2. *Scattering of particles in quantum field theory.* MSc Thesis, University of Warsaw, (2003). Advisor: J. Dereziński.