

# List of Publications

Wojciech Dybalski  
Technische Universität München

## 1 Publications in peer reviewed journals

1. W. Dybalski and A. Pizzo. *Coulomb scattering in the massless Nelson model III. Ground state wave functions and non-commutative recurrence relations.* Ann. Henri Poincaré **19**, 463–514 (2018) [arXiv:1704.02924](#).
2. W. Dybalski and A. Pizzo. *Coulomb scattering in the massless Nelson model II. Regularity of ground states.* Accepted for publication in Rev. Math. Phys. [arXiv:1302.5012](#).
3. W. Dybalski. *Asymptotic observables in gapped quantum spin systems.* Commun. Math. Phys. **357**, 231–248 (2018) [arXiv:1608.08750](#).
4. W. Dybalski. *From Faddeev-Kulish to LSZ. Towards a non-perturbative description of colliding electrons.* Nuclear Physics B **925**, 455–469 (2017) [arXiv:1706.09057](#).
5. S. Alazzawi and W. Dybalski. *Compton scattering in the Buchholz-Roberts framework of relativistic QED.* Lett. Math. Phys. **107**, 81–106 (2017) [arXiv:1509.03997](#).
6. S. Bachmann, W. Dybalski and P. Naaijken. *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](#). **AHP Prize 2016**.
7. W. Dybalski and J.S. Møller. *The translation invariant massive Nelson model III. Asymptotic completeness below the two-boson threshold.* Ann. Henri Poincaré **16**, 2603–2693 (2015) [arXiv:1210.6645](#).
8. W. Dybalski and A. Pizzo. *Coulomb scattering in the massless Nelson model I. Foundations of two-electron scattering.* J. Stat. Phys. **154**, 543–587 (2014) [arXiv:1302.5001](#).
9. W. Dybalski and C. Gérard. *A criterion for asymptotic completeness in local relativistic QFT.* Commun. Math. Phys. **332**, 1167–1202 (2014) [arXiv:1308.5187](#).
10. W. Dybalski and C. Gérard. *Towards asymptotic completeness of two-particle scattering in local relativistic QFT.* Commun. Math. Phys. **326**, 81–109 (2014) [arXiv:1211.3393](#).
11. W. Dybalski and Y. Tanimoto. *Asymptotic completeness for infraparticles in two-dimensional conformal field theory.* Lett. Math. Phys. **103**, 1223–1241 (2013) [arXiv:1112.4102](#).
12. W. Dybalski and Y. Tanimoto. *Infraparticles with superselected direction of motion in two-dimensional conformal field theory.* Commun. Math. Phys. **311**, 457–490 (2012) [arXiv:1101.5700](#).
13. W. Dybalski. *Towards a construction of inclusive collision cross-sections in the massless Nelson model.* Ann. Henri Poincaré **13**, 1427–1449 (2012) [arXiv:1104.4265](#).
14. W. Dybalski and Y. Tanimoto. *Asymptotic completeness in a class of massless relativistic quantum field theories.* Commun. Math. Phys. **305**, 427–440 (2011) [arXiv:1006.5430](#).

15. W. Dybalski. *Continuous spectrum of automorphism groups and the infraparticle problem*. Commun. Math. Phys. **300**, 273–299 (2010) [arXiv:0912.2013](#).
16. W. Dybalski. *Coincidence arrangements of local observables and uniqueness of the vacuum in QFT*. J. Phys. A **42**, 365201–365223 (2009) [arXiv:0905.2050](#).
17. W. Dybalski. *A sharpened nuclearity condition for massless fields*. Lett. Math. Phys. **84**, 217–230 (2008) [arXiv:0803.1468](#).
18. W. Dybalski. *A sharpened nuclearity condition and the uniqueness of the vacuum in QFT*. Commun. Math. Phys. **283**, 523–542 (2008) [arXiv:0706.4049](#).
19. R.M. Abolfach, W. Dybalski and P. Hawrylak. *Theory of a two-level artificial molecule in laterally coupled quantum Hall droplets*. Phys. Rev. B **73**, 075314–075319 (2006) [arXiv:cond-mat/0509585](#).
20. W. Dybalski and P. Hawrylak. *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](#).
21. W. Dybalski. *Haag-Ruelle scattering theory in presence of massless particles*. Lett. Math. Phys. **72**, 27–38 (2005) [arXiv:hep-th/0412226](#).

## 2 Preprints

1. W. Dybalski and M. Wrochna. *A mechanism for holography for non-interacting fields on Anti-de Sitter spacetimes*. [arXiv:1809.05123](#).
2. D. Cadamuro and W. Dybalski. *Relative normalizers of automorphism groups, infravacua and the problem of velocity superselection in QED*. [arXiv:1807.07919](#).

## 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.