List of Publications

Wojciech Dybalski (TU München)

1 Publications in peer reviewed journals

1. W. Dybalski and V. Morinelli. *The Bisognano-Wichmann property for asymptotically complete massless QFT.* Accepted for publication in Commun. Math. Phys. arXiv:1909.12809.

2. W. Dybalski and H. Spohn. *Effective mass of the polaron – revisited.* Accepted for publication in Ann. Henri Poincaré. arXiv:1908.03432.

3. W. Dybalski and B. Wegener. *Asymptotic charges, large gauge transformations and inequivalence of different gauges in external current QED.* JHEP **11** (2019) 126 arXiv:1907.06750.

4. W. Dybalski and Duc Viet Hoang. *A soft-photon theorem for the Maxwell-Lorentz system.* J. Math. Phys. **60**, 102903 (2019) arXiv:1908.02615.

5. D. Cadamuro and W. Dybalski. *Relative normalizers of automorphism groups, infravacua and the problem of velocity superselection in QED.* Commun. Math. Phys. **372**, 769–796 (2019) arXiv:1807.07919.

6. W. Dybalski and M. Wrochna. *A mechanism for holography for non-interacting fields on Anti-de Sitter spacetimes.* Class. Quant. Grav. **36**, 085006 (2019) arXiv:1809.05123.

7. 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.

8. W. Dybalski and A. Pizzo. *Coulomb scattering in the massless Nelson model II. Regularity of ground states.* Rev. Math. Phys. **31**, 1950010 (2018) arXiv:1302.5012.

9. W. Dybalski. *Asymptotic observables in gapped quantum spin systems.* Commun. Math. Phys. **357**, 231–248 (2018) arXiv:1608.08750.

10. 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.

11. 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.

12. S. Bachmann, W. Dybalski and P. Naaijkens. *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**.

13. 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.

14. 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.

15. W. Dybalski and C. Gérard. *A criterion for asymptotic completeness in local relativistic QFT.* Commun. Math. Phys. **332**, 1167–1202 (2014) arXiv:1308.5187.

16. 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.

17. 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.

18. 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.

19. 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.

20. 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.

21. W. Dybalski. *Continuous spectrum of automorphism groups and the infraparticle problem.* Commun. Math. Phys. **300**, 273–299 (2010) arXiv:0912.2013.

22. W. Dybalski. *Coincidence arrangements of local observables and uniqueness of the vacuum in QFT.* J. Phys. A **42**, 365201–365223 (2009) arXiv:0905.2050.

23. W. Dybalski. *A sharpened nuclearity condition for massless fields.* Lett. Math. Phys. **84**, 217–230 (2008) arXiv:0803.1468.

24. W. Dybalski. *A sharpened nuclearity condition and the uniqueness of the vacuum in QFT.* Commun. Math. Phys. **283**, 523–542 (2008) arXiv:0706.4049.

25. 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.

26. 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.

27. 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. D. Cadamuro and W. Dybalski. *Curing velocity superselection in non-relativistic QED by restriction to a lightcone.* arXiv:1902.09478.

2. W. Dybalski and A. Pizzo. *Coulomb scattering in the massless Nelson model IV. Atom-electron scattering.* arXiv:1902.08799.

3 Theses

1. *Scattering theory for quantum systems with infinitely many degrees of freedom.* Habilitation, Technical University of Munich, (2019). Advisors: C. Fewster, H. Spohn and S. Warzel.

2. *Spectral theory of automorphism groups and particle structures in quantum field theory.* PhD Thesis, University of Göttingen, (2009). Advisor: D. Buchholz.

3. *Scattering of particles in quantum field theory.* MSc Thesis, University of Warsaw, (2003). Advisor: J. Dereziński.