# PUBLICATION LIST

BRUNO NACHTERGAELE

(1) *Quantum angular momentum fluctuations*
J. Math. Phys. **26**, 2317-2323 (1985)

(2) *Groups of canonical transformations and the virial-Noether theorem*
Journal of Geometry and Physics, **3**, 315-325 (1986)
(with A. Verbeure)

(3) *Construction of equilibrium states for one-dimensional classical lattice systems*
Il Nuovo Cimento, **100 B**, 757-778 (1987)
(with L. Slegers)

(4) *Quantum tunneling in the Spin-Boson model*
Europhysics Letters, **4**, 963-965 (1987)
(with M. Fannes and A. Verbeure)

(5) *Exakte Resultaten voor het Spin-Bosonmodel*
PhD-thesis K.U.Leuven, (1987)

(6) *An application of non-univalent canonical transformations*
Proc. of the 'Eerste Belgisch Nationaal Congres over Theoretische en Toegepaste Mechanika', Brussels, may 1987, eds. P. Sas & M. Deville
(with A. Verbeure)

(7) *The equilibrium states of the Spin-Boson model*
Comm. Math. Phys., **114**, 537-548 (1988)
(with M. Fannes and A. Verbeure)

(8) *The overlap distribution for a non-random frustrated Ising model*
J. Phys. A: Math. Gen., **21**, 529-537 (1988)
(with L. Slegers)

(9) *The Parisi spin-glass order parameter for a frustrated Ising model*
Karpaćz Winter School in Theoretical Physics, January 1988
World Scientific, Singapore, pp 260-266
(with L. Slegers)

(10) *Tunneling in the equilibrium state of a Spin-Boson model*
J. Phys. A: Math. Gen., **21**, 1759-1768 (1988)
(with M. Fannes and A. Verbeure)

(11) *The ground state and its entropy for a class of one-dimensional classical lattice systems*
Physica, **149 A**, 432-446 (1988)
(with L. Slegers)

(12) *Translating the Spin-Boson model into a classical system*
J. Math. Phys., **29**, 2288-2293 (1988)
(with M. Fannes)

(13) *The mathematical structure of Spin-Boson models*
in M. Fannes and A. Verbeure (eds.), *Mathathical Methods in Statistical Mechanics*,
Vol. 1 of *Leuven Lecture Notes in Mathematical Physics*, Leuven University Press,
Leuven 1989, pp 149-165

(14) *Exact Antiferromagnetic Ground States for Quantum Chains*
Europhys. Lett., **10**, 633-637 (1989)
(with M. Fannes and R. Werner).

(15) *Construction and study of exact ground states for a class of quantum antiferromagnets*
Rev. Bras. de Física, **19**, 460-474 (1989)
(with M. Fannes and R. Werner).

(16) *Working with Quantum Markov States and their Classical Analogues*
in L. Accardi and W. von Waldenfels (Eds.) *Quantum Probability and Applications
V* (LNM 1442), Springer Verlag, Berlin-Heidelberg-New York (1990) pp 267–285.

(17) *Ground States of Antiferromagnetic Quantum Spin Chains*
in E. Vogel and S. Contreras (Eds.), *Proceedings of the Quinto Taller Sur de Física
del Sólido*, Universidad de la Frontera, Temuco (Chile), (1990), pp 29-43

(18) *Quantum Spin Chains with Residual Entropy*
in E. Tirapegui and W. Zeller (Eds.), *Instabilities and Non-Equilibrium Structures
III*, Kluwer Academic Publishers, 1991, p 65-73.

(19) *Uniqueness and Degeneracy of Ground States of Some Quantum Spin Chains*
in P. Cordero and B. Nachtergaele (Eds.), *Nonlinear Phenomena in fluids, solids
and other complex systems*, Proceedings of the Second Latinamerican Workshop on
Non-Linear Phenomena, North-Holland, Amsterdam, 1991, pp 299-311

(20) *Nonlinear Phenomena in fluids, solids and other complex systems*
Proceedings of the Second Latinamerican Workshop on Non-Linear Phenomena,
North-Holland, Amsterdam, 1991
(co-edited with P. Cordero)

(21) *The Overhauser Model: Equilibrium Fluctuation Dynamics*
J. Math. Phys. **32**, 2929-2935 (1991)
(with M. Broidio and A. Verbeure)

(22) *Valence Bond States on Quantum Spin Chains as Ground States with Spectral Gap*
J. Phys. **A**, Math.Gen., **24**, L185-L190 (1991)
(with M. Fannes and R. Werner)

(23) *Functions of Markov Processes and Algebraic Measures*
Rev. Math. Phys. **4**, 39-64 (1992)
(with M. Fannes and L. Slegers)

(24) *Finitely Correlated States on Quantum Spin Chains*
Commun. Math. Phys. **144**, 443-490 (1992)
(with M. Fannes and R. Werner)

(25) *Entropy Estimates for Finitely Correlated States*
Ann. Inst. H. Poincaré, **57**, 259-277 (1992)
(with M. Fannes and R. Werner)

(26) *Ground States of VBS models on Cayley Trees*
J. Stat. Phys. **66**, 939-973 (1992)
(with M. Fannes and R. Werner)

(27) *Applications of Finitely Correlated States to the Ground State Problem of Quantum Spin Chains*
in *Quantum Probability and Related Topics*, vol. VII World Scientific (1992), pp 261-274

(28) *Abundance of Translation Invariant Pure States on Quantum Spin Chains*
Lett. Math. Phys. **25**, 249-258 (1992)
(with M. Fannes and R. Werner)

(29) *Finitely Correlated Pure States*
J. Funct. Anal., **120**, 511-534 (1994)
(with M. Fannes and R. Werner)

(30) *Geometric Aspects of Quantum Spin States*
Commun. Math. Phys., **164**, 17-63 (1994)
(with M. Aizenman)

(31) *A stochastic geometric approach to quantum spin systems*
in G.R. Grimmett (Ed.), *Probability theory of spatial disorder and phase transition*, Kluwer, Dordrecht 1994, pp 237-246.

(32) *Stochastic geometric aspects of some quantum spin chains*
in Ch. Maes, M. Fannes, and A. Verbeure (Ed.), *Micro, meso and macro approaches in Physics*, Plenum, New York - London, 1994, pp 81-89

(33) *Quasi-state decompositions for quantum spin systems*
in *Probability Theory and Mathematical Statistics (Proceedings of the 6th Vilnius Conference)*, B. Grigelionis et al. (Eds), VSP/TEV, Utrecht-Tokyo-Vilnius, 1994, pp 565-590

(34) *Quantum Spin Chains with Quantum Group Symmetry*
Commun. Math. Phys., **174**, 477-507, (1996)
(with M. Fannes and R.F. Werner)

(35) *The Stability of the Peierls Instability for Ring-Shaped Molecules*
Phys. Rev. B, **51**, 4777–4791 (1995)
(with E.H. Lieb)

(36) *Dimerization in Ring-Shaped Molecules: The Stability of the Peierls Instability,*
in the proceedings of the XIth ICMP, Paris July 18-23, 1994, D. Iagolnitzer (Ed.), International Press, Boston 1995, pp. 423–431
(with E.H. Lieb)

(37) *Bond-Alternation in Ring-Shaped Molecules: The Stability of the Peierls Instability,*
Int. J. Quantum Chemistry, **58**, 699-706 (1996)
(with E.H. Lieb)

(38) *The spectral gap for some quantum spin chains with discrete symmetry breaking*
Commun. Math. Phys., **175**, 565-606 (1996)

(39) *On the flux phase conjecture at half-filling: an improved proof,*
J. Stat. Phys., **85**, 745-761 (1996)
(with N. Macris)

(40) *The spectral gap of the ferromagnetic XXZ chain,*
Lett. Math. Phys., **40**, 1-16 (1997)
(with T. Koma)

(41) *Quantum gate arrays as coherent sums over classical logic gate arrays,*
J. Phys. A: Math. Gen., **30**, 8685-8692 (1997)
(with V. Periwal)

(42) *Quantum Interfaces,*
in *Quantum Probability*, R. Alicki, M. Bozejko, and W.A. Majewski (Eds), Banach
Center Publications vol. 43, Polish Academy of Sciences, Warzawa 1998, pp 321–329.

(43) *The complete set of ground states of the ferromagnetic XXZ chains,*
Adv. Theor. Math. Phys., **2**, 533-558 (1998), `arXiv:cond-mat/9709208`.
(with T. Koma),

(44) *Interface states of quantum lattice models,*
in *Recent Trends in Infinite Dimensional Non-Commutative Analysis*, T. Matsui
(Ed), RIMS Kokyuroku # 1035, Kyoto, 1998, pp 133–144.
(with T. Koma)

(45) *Rigidity of the 111 interface in the Falicov-Kimball model,*
J. Stat. Phys., **99**, 461-555 (2000), `arXiv:math-ph/9804008`.
(with N. Datta and A. Messager)

(46) *Interface states of quantum spin systems,*
in *Mathematical results in statistical mechanics*, S. Miracle-Solé, J. Ruiz, and V.
Zagrebnov (Eds), World Scientific, 1999, pp 287–299, `arXiv:math-ph/9809027`.
(with A. Messager)

(47) *Rigidity of interfaces in a model of crystalline matter,*
in *Mathematical results in statistical mechanics*, S. Miracle-Solé, J. Ruiz, and V.
Zagrebnov (Eds), World Scientific, 1999, pp 163–183.
(with N. Datta and A. Messager)

(48) *Path integral representation for interface states of the anisotropic Heisenberg model.*
Rev. Math. Phys., **12**, 1325-1344 (2000), `arXiv:math-ph/9908004`.
(with O. Bolina and P. Contucci)

(49) *Finite-volume excitations of the 111 interface in the quantum XXZ model.*
Comm. Math. Phys. **212**, 63-91 (2000), `arXiv:math-ph/9908018`.
(with O. Bolina, P. Contucci, and S. Starr)

(50) *A continuum approximation for the excitations of the $(1, 1, \ldots, 1)$ interface in the
quantum Heisenberg model.*
Electronic Journal of Differential Equations, Conf. 04, pp. 1-10 (2000),
`arXiv:math-ph/9909018`
(with O. Bolina, P. Contucci, and S. Starr)

(51) *Applied Analysis*
World Scientific, 420 pp, 2001.
Available on-line at
`https://www.math.ucdavis.edu/~hunter/book/pdfbook.html`.
(with J.K. Hunter)

(52) *Droplet states in the XXZ Heisenberg Chain*
Commun. Math. Phys., **218**, 569-607 (2001), `arXiv:math-ph/0009002`.
(with S. Starr)

(53) *Interfaces and droplets in quantum lattice models*
in *XIII International Congress of Mathematical Physics*, A. Grigoryan, A. Fokas, T. Kibble, B. Zegarlinski (Eds), International Press, Boston 2001, pp 243–249, `arXiv:math-ph/0009027`.

(54) *The spectral gap for the ferromagnetic spin-J XXZ chain.*
Adv. Theor. Math. Phys., **5**, 1047–1090 (2001), `arXiv:math-ph/0110017`.
(with T. Koma and S. Starr)

(55) *Derivation of the Euler Equations from Many-Body Quantum Mechanics*, in Li Tat-sien (Ed.), *Proceedings of the International Congress of Mathematicians*, vol. III, Higher Education Press, Beijing, 2002, pp 467-476, `arXiv:math-ph/0210036`.
(with H.-T. Yau)

(56) *The Ferromagnetic Heisenberg XXZ chain in a pinning field*,
Phys. Rev. B., **66**, #064429 (2002), `arXiv:math-ph/0204011`.
(with P. Contucci and W. Spitzer)

(57) *The equilibrium states for a model with two kinds of Bose condensation.*
J. Stat. Phys., **109**, 142–176 (2002), `arXiv:math-ph/0201029`.
(with J.-B. Bru and V. Zagrebnov)

(58) *Derivation of the Euler equations from Quantum Dynamics*
Commun. Math. Phys., **243**, 485-540 (2003), `arXiv:math-ph/0209027`.
(with H.-T. Yau)

(59) *On the dynamics of interfaces in the ferromagnetic XXZ chain under weak perturbations*,
in Y. Karpeshina, G. Stolz, R, Weikard, and Y. Zeng (Eds), *Advances in Differential Equations and Mathematical Physics*, Contempary Mathematics vol. 327, American Mathematical Society, 2003, pp 251–270, `arXiv:math-ph/0210017`.
(with Wolfgang L. Spitzer and Shannon Starr)

(60) *Path Integral Representation for the Spin-Pinned Quantum XXZ Chain*,
Markov Processes Rel. Fields, **11**, 211-221 (2005), `arXiv:math-ph/0306057`.
(with Oscar Bolina and Pierluigi Contucci)

(61) *The large-spin asymptotics of the ferromagnetic XXZ chain*,
Markov Processes Rel. Fields, **11**, 237-266 (2005), `arXiv:math-ph/0307051`.
(with Tom Michoel)

(62) *Ferromagnetic Ordering of Energy Levels*,
J. Stat. Phys., **116**, 719–738 (2004), `arXiv:math-ph/0308006`.
(with Wolfgang Spitzer and Shannon Starr)

(63) *Central limit theorems for the large-spin asymptotics of quantum spins*,
Prob. Theory Rel. Fields, **130**, 493–517 (2004), `arXiv:math-ph/0310027`.
(with Tom Michoel)

(64) *Condensed Matter Physics and Exactly Soluble Models. Selecta of Elliott H. Lieb*,
Springer Verlag, 2004.
(Co-edited with Jan Philip Solovej and Jakob Yngvason)

(65) *Statistical Mechanics. Selecta of Elliott H. Lieb*,
Springer Verlag, 2004.
(Co-edited with Jan Philip Solovej and Jakob Yngvason)

(66) *Ferromagnetic Lieb-Mattis Theorem*,
Phys. Rev. Lett., **94**, 057206 (2005), `arXiv:math-ph/0408020`.
(with Shannon Starr)

(67) *Quantum Spin Systems*,
in J.-P. Françoise, G. Naber, and S. T. Tsou (Eds), Encyclopedia of Matematical Physics, Elsevier, pp 295–301 (2006),
`arXiv:math-ph/0409006`.

(68) *A model with simultaneous first and second order phase transitions*,
J. Stat. Phys, **122**, 1-14 (2006), `arXiv:cond-mat/0501229`.
(with Alain Messager)

(69) *Ordering of Energy Levels in Heisenberg Models and Applications*,
in J. Ash and A. Joye (Eds), Mathematical Physics of Quantum Mechanics, Selected and Refereed Lectures from QMath9, Lecture Notes in Physics 690, Springer Verlag, 2006, pp 149–170. `arXiv:math-ph/0503056`.
(with Shannon Starr)

(70) *Recent Progress in Quantum Spin Systems*,
Markov Processes Rel. Fields (J.T. Lewis special edition), **13**, 315–329 (2007),
`arXiv:math-ph/0512020`.
(with Robert Sims)

(71) *Lieb-Robinson Bounds and the Exponential Clustering Theorem*,
Commun. Math. Phys., **265**, 119–130 (2006), `arXiv:math-ph/0506030`.
(with Robert Sims)

(72) *Droplet Excitations for the Spin-1/2 XXZ Chain with Kink Boundary Conditions*,
Ann. H. Poincaré, **8**, 165–201 (2007), `arXiv:math-ph/0508049`.
(with Wolfgang Spitzer and Shannon Starr)

(73) *Quantum Spin Systems after DLS1978*,
in *Spectral Theory and Mathematical Physics: A Festschrift in Honor of Barry Simon's 60th Birthday. Quantum Field Theory, Statistical Mechanics, and Nonrelativistic Quantum Systems*, Fritz Gesztesy et al. (Eds), Proceedings of Symposia in Pure Mathematics, Volume 76, part 1, pp 47–68, American Mathematical Society, 2007. `arXiv:math-ph/0603017`.

(74) *Propagation of Correlations in Quantum Lattice Systems*,
J. Stat. Phys., **124**, 1–13 (2006), `arXiv:math-ph/0603064`.
(with Yoshiko Ogata and Robert Sims)

(75) *Entanglement in Finitely Correlated Spin States*,
Phys. Rev. Lett., **97** 140601 (2006), `arXiv:math-ph/0606018`
(with Spyridon Michalakis)
This article also appeared in *Virtual Journal of Quantum Information*, **6**, issue 10 (2006).

(76) *A Multi-Dimensional Lieb-Schultz-Mattis Theorem,*
Commun. Math. Phys. **276**, 437–472 (2007), `arXiv:math-ph/0608046`
(with Robert Sims)

(77) *Isolated Eigenvalues of the Ferromagnetic Spin-J XXZ Chain with Kink Boundary Conditions,*
J. Stat. Mech. P01016 (2008), `arXiv:0709.1733`
(with Jaideep Mulherkar, Robert Sims, and Shannon Starr)

(78) *Locality Estimates for Quantum Spin Systems*
in: Sidoravicius, Vladas (Ed.), *New Trends in Mathematical Physics. Selected contributions of the XVth International Congress on Mathematical Physics,* Springer Verlag, 2009, pp 591–614. `arXiv:0712.3318`.
(with Robert Sims)

(79) *Lieb-Robinson Bounds for Harmonic and Anharmonic Lattice Systems*
Commun. Math. Phys. **286**, 1073–1098 (2009), `arXiv:0712.3820`.
(with Hillel Raz, Benjamin Schlein, and Robert Sims)

(80) *Transport of one-dimensional interfaces in the Heisenberg model,*
J. Phys. A: Math. Theor. **41** 492001 (2008), `arXiv:cond-mat/0702059`
(with Tom Michoel and Wolfgang Spitzer)

(81) *Implementing Quantum Gates using the Ferromagnetic Spin-J XXZ Chain with Kink Boundary Conditions,*
New J. Phys., **12**, 025003 (2010), `arXiv:0902.1276`.
(with Tom Michoel and Jaideep Mulherkar)

(82) *Approximating the ground state of gapped quantum spin systems,*
J. Math. Phys. **50**, 095213 (2009), `arXiv:0904.4642`.
(with Eman Hamza, Spyridon Michalakis, and Robert Sims)
This article also appeared in *Virtual Journal of Quantum Information*, **9**, issue 9 (2009), and in *Virtual Journal of Nanoscale Science & Technology*, **20**, issue 12 (09/21/2009).

(83) *Lieb–Robinson bounds and the existence of infinite–system dynamics,*
In *XVI International Congress on Mathematical Physics*, P. Exner (Ed), World Scientific, 2010, pp 391–396, `arXiv:0909.2845`.

(84) *On the Existence of the Dynamics for Anharmonic Quantum Oscillator Systems,*
Rev. Math. Phys., **22**, 207–231(2010), `arXiv:0909.2249`.
(with Benjamin Schlein, Robert Sims, Shannon Starr, and Valentin Zagrebnov)

(85) *Lieb-Robinson Bounds in Quantum Many-Body Physics*, In *Entropy and the Quantum*, Robert Sims and Daniel Ueltschi (Eds),
Contemporary Mathematics, volume 529, American Mathematical Society (2010) pp 141-176, `arXiv:1004.2086`.
(with Robert Sims)

(86) *Much Ado About Something. Why Lieb-Robinson bounds are useful,*
IAMP News Bulletin, October 2010, pp 22–29, `arXiv:1102.0835`
(with Robert Sims)

(87) *Automorphic Equivalence within Gapped Phases of Quantum Lattice Systems*,
     Commun. Math. Phys. **309**, 835–871 (2012) `arXiv:1102.0842`
     (with Sven Bachmann, Spyridon Michalakis, and Robert Sims)

(88) *Enrichment and aggregation of topological motifs are independent organizational principles of integrated interaction networks*,
     Molecular BioSystems **7**, 2769 - 2778 (2011), `arXiv:1109.1932`.
     (with Tom Michoel, Anagha Joshi, and Yves Van de Peer)

(89) *Local approximation of observables and commutator bounds*,
     in J. Janas, P. Kurasov, A. Laptev, and S. Naboko (Eds.), *Operator Methods in Mathematical Physics*, Operator Theory: Advances and Applications, **227**, 143–149 (2013), `arXiv:1103.5663`.
     (with Volkher Scholz and Reinhard F Werner)

(90) *Lieb-Robinson Bounds and Existence of the Thermodynamic Limit for a Class of Irreversible Quantum Dynamics*,
     In *Entropy and the Quantum II*, Robert Sims and Daniel Ueltschi (Eds), Contemporary Mathematics, volume 552, American Mathematical Society (2011) pp 161–175, `arXiv:1103.1122`.
     (with Anna Vershynina and Valentin A Zagrebnov)

(91) *Ferromagnetic Ordering of Energy Levels for $U_q(sl_2)$ Symmetric Spin Chains*,
     Lett. Math. Phys. **100**, 327–356 (2012) `arXiv:1105.5264`.
     (with Stephen Ng and Shannon Starr)

(92) *Product Vacua with Boundary States*
     Phys. Rev. B, **86**, 035149 (2012), `arXiv:1112.4097`
     (with Sven Bachmann)

(93) *Entropy rate calculations of algebraic measures*
     2012 IEEE International Symposium on Information Theory Proceedings, 1072–1076 (2012), `arXiv:1105.2377`.
     (with Katy Marchand and Jaideep Mulherkar)

(94) *Alignment and integration of complex networks by hypergraph-based spectral clustering*
     Phys. Rev. E, **86**, 056111 (2012), `arXiv:1205.3630`.
     (with Tom Michoel)

(95) Quantum harmonic oscillator systems with disorder
     J. Stat. Phys. **149**, 969–1012 (2012), `arXiv:1208.2705`
     (with Robert Sims and Günter Stolz)

(96) *Non-equilibrium states of a photon cavity pumped by an atomic beam*
     Ann. Henri Poincaré, **15**, 213–262 (2014), `arXiv:1206.6169`
     (with Anna Vershynina and Valentin A Zagrebnov)

(97) *An Area Law for the Bipartite Entanglement of Disordered Oscillator Systems*
     J. Math. Phys. **54**, 042110 (2013), `arXiv:1301.3116`
     (with Robert Sims and Günter Stolz)

(98) *Product vacua with boundary states and the classification of gapped phases*
     Commun. Math. Phys., **329**, 509-544 (2014), `arXiv:1212.3718`
     (with Sven Bachmann)

(99) *Elementary excitations in gapped quantum spin systems*
Phys. Rev. Lett. **111**, 080401 (2013), `arXiv:1305.2176`
(with Jutho Haegeman, Spyridon Michalakis, Tobias J. Osborne, Norbert Schuch, and Frank Verstraete)

(100) *On gapped phases with a continuous symmetry and boundary operators*
J. Stat. Phys. **154**, 91-112 (2014), `arXiv:1307.0716`
(with Sven Bachmann)

(101) *Product Vacua and Boundary State Models in d Dimensions*
J. Stat. Phys. **160**, 636–658 (2015), `arXiv:1410.0398`
(with Sven Bachmann, Eman Hamza, and Amanda Young)

(102) *Asymptotic Ferromagnetic Ordering of Energy Levels for the Heisenberg Model on Large Boxes*, `arXiv:1509.00907`
(with Wolfgang Spitzer and Shannon Starr)

(103) *Spectral Gap and Edge Excitations of d-dimensional PVBS models on half-spaces*
J. Stat. Phys. **162**,1485–1521 (2016), `arXiv:1509.07550`
(with Michael Bishop and Amanda Young)

(104) *Entanglement Dynamics of Disordered Quantum XY Chains*
Lett. Math. Phys. **109**, 649–674 (2016). `arXiv:1510.00262`
(with Houssam Abdul-Rahman, Robert Sims, and Günter Stolz)

(105) *Linear Algebra as an Introduction to Abstract Mathematics*,
`https://www.math.ucdavis.edu/∼anne/linear_algebra/index.html`,
World Scientific, 2016
(with Isaiah Lankham and Anne Schilling).

(106) *The complete set of infinite volume ground states for Kitaev's abelian quantum double models*,
Commun. Math. Phys., **357**, 125–157 (2018) `arXiv:1608.04449`
(with Matthew Cha and Pieter Naaijkens)

(107) *Localization properties of the disordered XY spin chain. A review of mathematical results with an eye toward Many-Body Localization*,
Ann. Phys. (Berlin), **529**, 1600280 (2017) `arXiv:1610.01939`
(with Houssam Abdul-Rahman, Robert Sims, and Günter Stolz)

(108) *A direct proof of dimerization in a family of SU(n)-invariant quantum spin chains*,
Lett. Math. Phys., **107**,1629–1647 (2017) `arXiv:1701.03983`
(with Daniel Ueltschi)

(109) *Lieb-Robinson bounds, the spectral flow, and stability of the spectral gap for lattice fermion systems*, Contribution for the proceedings of QMath13: Mathematical Results in Quantum Physics, Atlanta, October 8-11, 2016, Contemporary Mathematics, volume 717, American Mathematical Society (2018) pp 93–115, `arXiv:1705.08553`
(with Robert Sims and Amanda Young)

(110) *On the stability of charges in infinite quantum spin systems*, Commun. Math. Phys. **373**, 219–264 (2020), `arXiv:1804.03203`
(with Matthew Cha and Pieter Naaijkens)

(111) *Stability of Gapped Ground State Phases of Spins and Fermions in One Dimension* ,
      J. Math. Phys. **59**, 091415 (2018) `arXiv:1804.04750`
      (with Alvin Moon)

(112) *Quasi-Locality Bounds for Quantum Lattice Systems. I. Lieb-Robinson Bounds,
      Quasi-Local Maps, and Spectral Flow Automorphisms*, J. Math. Phys. **60**, 061101
      (2019) `arXiv:1810.02428`
      (with Robert Sims and Amanda Young)

(113) *A class of two-dimensional AKLT models with a gap*, in Analytic Trends in Math-
      ematical Physics, Houssam Abdul-Rahman, Robert Sims, Amanda Young (Eds),
      Contemporary Mathematics vol 741, pp 1–21 (2020), American Mathematical Soci-
      ety, `arXiv:1901.09297`
      (with Houssam Abdul-Rahman, Marius Lemm, Angelo Lucia, and Amanda Young)

(114) *Gapped PVBS models for all species numbers and dimensions* ,
      Rev. Math. Phys. **31**, 1950028 (2019) `arXiv:1902.09678`
      (with Marius Lemm)

(115) *Slow propagation in some disordered quantum spin chains*, `arXiv:1906.10167`
      (with Jake Reschke)

(116) *A dispersive Toric Code model with fusion and de-fusion*,
      Phys. Rev. B **101**, 115105 (2020) `arXiv:1910.10309`
      (with Nicholas E. Sherman)

(117) *Lieb-Robinson bounds and strongly continuous dynamics for a class of many-body
      fermion systems in* $\mathbb{R}^d$, `arXiv:1912.12552`
      (with Martin Gebert, Jake Reschke, and Robert Sims)

(118) *Spectral Gaps and Incompressibility in a* $\nu = 1/3$ *Fractional Quantum Hall System*,
      `arXiv:2004.04992`
      (with Simone Warzel and Amanda Young)

(119) *Low-complexity eigenstates of a* $\nu = 1/3$ *fractional quantum Hall system* , `arXiv:2006.00300`
      (with Simone Warzel and Amanda Young)

Work submitted or in preparation:

(120) *Quantum Spin Systems and Finitely Correlated States. I.*,
      Lectures given at the Volterra-CIRM International School on *Quantum Markov chains
      and their applications in physics and quantum information.* Centro Vito Volterra
      Preprint Nr 497.

(121) *On the dynamics of lattice systems with unbounded on-site terms in the Hamiltonian*,
      `arXiv:1410.8174`
      (with Robert Sims)