

List of publications of Lachezar S. Georgiev

- [1] R. L. Pavlov, J. Maruani, Y. I. Delchev, and L. S. Georgiev, “Théorie de la fonctionnelle de la densité avec spin. VII. Équation d’Euler–Lagrange pour $\rho(r)$,” *C.R. Acad. Sci. Paris* **321, Série IIb** (1995) pp. 371–376.
- [2] B. N. Bakalov, L. S. Georgiev, and I. T. Todorov, “A QFT approach to $W_{1+\infty}$,” *New Trends in Quantum Field Theory Proc. of 1995 Razlog (Bulgaria) Workshop*, A. Ganchev et al. (eds.) (Heron Press, Sofia) (1996) pp. 147–158, hep-th/9512160.
- [3] L. S. Georgiev and I. T. Todorov, “Characters and partition function for the Wen–Wu model of the Haldane–Rezayi state,” hep-th/9611084.
- [4] L. S. Georgiev, Y. I. Delchev, R. L. Pavlov, and J. Maruani, “Core–valence separation for an open–shell atom in the LST–DFT,” *Quantum Systems in Chemistry and Physics*, R. McWeeny et al. (eds.) Kluwer Acad. Publishers (1997) pp. 309–321.
- [5] L. S. Georgiev, Y. I. Delchev, R. L. Pavlov, and J. Maruani, “Local–scaling transformation in the effective-core approximation for an open–shell atom,” *J. of Molecular Structure (Theochem)* **433** (1998) 35–42.
- [6] L. S. Georgiev and I. T. Todorov, “RCFT extensions of $W_{1+\infty}$ in terms of bilocal fields,” *J. Math. Phys.* **39** (1998) 5762–5771, hep-th/9710134.
- [7] A. Cappelli, L. S. Georgiev, and I. T. Todorov, “A unified conformal field theory approach to paired quantum Hall states,” *Commun. Math. Phys.* **205** (1999) 657–689, preprint ESI-621 (1998) ; hep-th/9810105.
- [8] A. Cappelli, L. S. Georgiev, and I. T. Todorov, “Coset construction for the non-Abelian Read–Rezayi states,” in: E. Ivanov, S. Krivoniz, A. Pashev (Eds.), *Proc. of Supersymmetries and quantum Symmetries, SQS’99, July 1999, Dubna, JINR (2000)* (2000) 235, preprint ESI/828.
- [9] A. Cappelli, L. S. Georgiev, and I. T. Todorov, “Parafermion Hall states from coset projections of Abelian conformal theories,” *Nucl. Phys.* **B 599 [FS]** (2001) 499–530, hep-th/0009229.
- [10] L. S. Georgiev, “Stability and activation gaps of parafermionic Hall states in the second Landau level,” *Nucl. Phys.* **B 626** (2002) 415–434, cond-mat/0102451.
- [11] L. S. Georgiev, “The $\nu = 5/2$ quantum Hall state revisited: spontaneous breaking of the chiral fermion parity and phase transition between Abelian and non-Abelian statistics,” *Nucl. Phys.* **B 651** (2003) 331–360, hep-th/0108173.
- [12] L. S. Georgiev, “The diagonal affine coset construction of the \mathbb{Z}_k parafermion Hall states,” in *Proc. of the Fifth Int. Workshop "Lie Theory and its Applications in Physics", June 2003, Varna, Bulgaria.*, H.-D. Doebner and V. Dobrev, eds., pp. 301–310. World Scientific, 2003. hep-th/0402159.

- [13] L. Alexandrov and L. Georgiev, “Prime number diffeomorphisms, Diophantine equations and the Riemann hypothesis,” *JINR-Dubna preprint: E5-2004-181* (2004) math-ph/0411071.
- [14] L. S. Georgiev and M. R. Geller, “Magnetic moment oscillations in a quantum Hall ring,” *Phys. Rev. B* **70** (2004) 155304, cond-mat/0404681.
- [15] L. S. Georgiev, “Chiral persistent currents and magnetic susceptibilities in the parafermion quantum Hall states in the second Landau level with Aharonov–Bohm flux,” *Phys. Rev. B* **69** (2004) 085305, cond-mat/0311339.
- [16] L. S. Georgiev, “A universal conformal field theory approach to the chiral persistent currents in the mesoscopic fractional quantum Hall states,” *Nucl. Phys. B* **707** (2005) 347–380, hep-th/0408052.
- [17] L. S. Georgiev and M. R. Geller, “Aharonov–Bohm effect in the non-Abelian quantum Hall fluid,” *Phys. Rev. B* **73** (2006) 205310, cond-mat/0511236.
- [18] L. S. Georgiev, “Conformal field theory description of mesoscopic phenomena in the fractional quantum Hall effect,” in *Proc. of the Fourth International Symposium “Quantum Theory and Symmetries”, August 2005, Varna, Bulgaria*, V. K. Dobrev, ed., pp. 641–649. Heron Press, Sofia, 2006. hep-th/0601075.
- [19] L. S. Georgiev, “Topologically protected gates for quantum computation with non-Abelian anyons in the Pfaffian quantum Hall state,” *Phys. Rev. B* **74** (2006) 235112, cond-mat/0607125.
- [20] L. S. Georgiev, “Towards a universal set of topologically protected gates for quantum computation with Pfaffian qubits,” *Nucl. Phys. B* **789** (2008) 552–590, hep-th/0611340.
- [21] A. Ahlbrecht, L. S. Georgiev, and R. F. Werner, “Implementation of Clifford gates in the Ising-anyon topological quantum computer,” *Phys. Rev. A* **79** (2009) 032311, arXiv:0812.2338.
- [22] L. S. Georgiev, “Topological quantum computation with the universal R matrix for Ising anyons,” in *Proc. of the VII Int. Workshop “Lie Theory and its Applications in Physics”, June 2007, Varna, Bulgaria*, H.-D. Doebner and V. Dobrev, eds., pp. 256–265. Heron Press, Sofia, 2008. arXiv:0812.2333.
- [23] L. S. Georgiev, “Ultimate braid-group generators for exchanges of Ising anyons,” *J. Phys. A: Math. Theor.* **42** (2009) 225203, arXiv:0812.2334.
- [24] L. S. Georgiev, “Computational equivalence of the two inequivalent spinor representations of the braid group in the Ising topological quantum computer,” *J. Stat. Mech.* (2009) P12013, arXiv:0812.2337.
- [25] A. Cappelli, L. S. Georgiev, and G. R. Zemba, “Coulomb blockade in hierarchical quantum Hall droplets,” *J. Phys. A: Math. Theor.* **42** (2009) 222001, arXiv:0902.1445.

- [26] A. Ahlbrecht, L. S. Georgiev, and R. F. Werner, “Monodromy analysis of the computational power of the Ising topological quantum computer,” in *AIP Conf. Proceedings*, H.-D. Doebner and V. Dobrev, eds., vol. 1243, pp. 279–288. Proc. of the VIII International Workshop "Lie Theory and its Applications in Physics", 15-21 June 2009, Varna, Bulgaria, 2010. arXiv:0911.2591.
- [27] L. S. Georgiev, “Thermal broadening of the Coulomb blockade peaks in quantum Hall interferometers,” *EPL* **91** (2010) 41001, arXiv:1003.4871.
- [28] L. S. Georgiev, “Hilbert space decomposition for Coulomb blockade in Fabry–Pérot interferometers,” in *Lie Theory and Its Applications in Physics: IX International Workshop*, V. Dobrev, ed., Springer Proceedings in Mathematics & Statistics 36, pp. 439–450. 2011. arXiv:1112.5946. Proceedings of the 9-th International Workshop "Lie Theory and Its Applications in Physics", 20-26 June 2011, Varna, Bulgaria.
- [29] L. S. Georgiev, “Thermopower in the Coulomb blockade regime for Laughlin quantum dots,” in *Lie Theory and Its Applications in Physics*, V. Dobrev, ed., Springer Proceedings in Mathematics & Statistics 111, pp. 279–289. 2014. arXiv:1406.5592. Proceedings of the 10-th International Workshop "Lie Theory and Its Applications in Physics", 17-23 June 2013, Varna, Bulgaria.
- [30] P. Petkov, T. Marinov, D. Tonev, L. Georgiev, Z. Peshev, N. Goutev, M. Yavahchova, Z. Nikolaeva, P. Krustev, G. Grigorov, and B. Dimitrov, “Simulation of the fission fragments spatial distribution in the Zr-alloy cladding of the fuel elements,” in *WWER Fuel Performance, Modeling and Experimental Support*, pp. 538–540. 2014. Proc. of the 10-th international Conference, 7-14 Sept. 2013, Sandanski, Bulgaria.
- [31] L. S. Georgiev, “Thermoelectric properties of Coulomb-blockaded fractional quantum Hall islands,” *Nucl. Phys. B* **894** (2015) 284–306, arXiv:1406.6177.
- [32] L. S. Georgiev, “Thermopower and thermoelectric power factor of \mathbb{Z}_k parafermion quantum dots,” *Nucl. Phys. B* **899** (2015) 289–311, arXiv:1505.02538.
- [33] L. S. Georgiev, “Thermoelectric characteristics of \mathbb{Z}_k parafermion Coulomb islands,” in *Lie Theory and Its Applications in Physics*, V. Dobrev, ed., “Springer Proceedings in Mathematics & Statistics” Vol. 191, pp. 361–369. Springer, Tokyo-Heidelberg, 2016. arXiv:1601.07034. Proceedings of the XI International Workshop “Lie Theory and Its Applications In Physics”, 15 - 21 June 2015, Varna, Bulgaria.
- [34] L. S. Georgiev, “Topological quantum computation with non-Abelian anyons in fractional quantum Hall states,” in *Progress of Theoretical Chemistry and Physics*, A. Tadjer, R. Pavlov, J. Maruani, E. J. Brandas, and G. Delgado-Barrio, eds., p. ***. 2016. arXiv:1602.05035. Proceedings of the XX International Workshop on Quantum Systems in Chemistry and Physics, 14-20 September 2015, Varna, Bulgaria.
- [35] D. Tonev, N. Goutev, and L. S. Georgiev, “Cyclotron laboratory of the Institute for Nuclear Research and Nuclear Energy,” *J. Phys. CS* **724** (2016) 012049. In *XXI International School on Nuclear Physics, Neutron Physics and Applications 7–12 Sept. 2015, Varna, Bulgaria*.

- [36] D. Tonev, N. Goutev, L. S. Georgiev, and A. Nikolov, “Radioisotopes production laboratory at the Institute for Nuclear Research and Nuclear Energy,” in *Progress of Theoretical Chemistry and Physics*, A. Tadjer, R. Pavlov, J. Maruani, E. J. Brandas, and G. Delgado-Barrio, eds., p. ***. 2016. Proceedings of the XX International Workshop on Quantum Systems in Chemistry and Physics, 14-20 September 2015, Varna, Bulgaria.
- [37] D. Tonev, N. Goutev, and L. S. Georgiev, “Accelerator physics and nuclear energy education in INRNE–BAS,” in *WVER Fuel Performance, Modeling and Experimental Support*, pp. 19–22. 2016. Proc. of the 11-th international Conference, 26 Sept.–03 Oct. 2015, Golden Sands Resort, Bulgaria.