

Publication list of Prof. Luis Santos

Preprints

1. *Disorderless quasi-localization of polar gases in one-dimensional lattices* W. Li, A. Dhar, X. Deng, K. Kasamatsu, L. Barbiero, and L. Santos, arXiv:1901.09762.
2. *One-dimensional quasicrystals with power-law hopping*, X. Deng, S. Ray, S. Sinha, G. V. Shlyapnikov, and L. Santos, arXiv:1808.03585.
3. *Heralded Generation of Macroscopic Superposition States in a Spinor Bose-Einstein Condensate*, L. Pezzè, M. Gessner, P. Feldmann, C. Klempt, L. Santos, and A. Smerzi, arXiv:1712.03864.

Papers in Journals

4. *Viewpoint: A quasicrystal for quantum simulations*, L. Santos, *Physics* **12**, 31 (2019).
5. *Observation of a dipolar quantum gas with metastable supersolid properties*, L. Tanzi, E. Lucioni, F. Fama, J. Catani, A. Fioretti, C. Gabbanini, R. N. Bisset, L. Santos, and G. Modugno, *Phys. Rev. Lett.* **122**, 130405 (2019); arXiv:1811.02613.
6. *Dimensional crossover for the beyond-mean-field correction in Bose gases*, T. Ilg, J. Kumlin, L. Santos, D. S. Petrov, and H. P. Büchler, *Phys. Rev. A* **98**, 051604(R) (2018); arXiv:1806.01784.
7. *Creation of entangled atomic states by an analogue of the Dynamical Casimir Effect*, K. Lange, J. Peise, B. Lücke, T. Gruber, A. Sala, A. Polls, W. Ertmer, B. Juliá-Díaz, L. Santos, and C. Klempt, *New J.*

Phys. **20**, 103017 (2018); arXiv:1805.02560.

8. Quenched dynamics and spin-charge separation in an interacting topological lattice, L. Barbiero, L. Santos, and N. Goldman, Phys. Rev. B **97**, 201115(R) (2018); arXiv:1803.06957.
9. *Probing the exchange statistics of one-dimensional anyon models*, S. Greschner, L. Cardarelli, and L. Santos, Phys. Rev. A **97**, 053605 (2018) (Editor's suggestion); arXiv:1802.03970.
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11. *Interferometric sensitivity and entanglement by scanning through quantum phase transitions in spinor Bose-Einstein condensates*, P. Feldmann, M. Gessner, M. Gabbrielli, C. Klempt, L. Santos, L. Pezzè, and A. Smerzi, Phys. Rev. A **97**, 032339 (2018); arXiv:1712.03896.
12. *Observation of Roton Mode Population in a Dipolar Quantum Gas*, L. Chomaz, R. M. W. van Bijnen, D. Petter, G. Faraoni, S. Baier, J. H. Becher, M. J. Mark, F. Wächtler, L. Santos, and F. Ferlaino, Nature Phys. **14**, 442 (2018); arXiv:1705.06914.
13. *Hidden order and symmetry protected topological states in quantum link ladders*, L. Cardarelli, S. Greschner, and L. Santos, Phys. Rev. Lett. **119**, 180402 (2017); arXiv:1707.03225.
14. *Tuning an effective spin chain of strongly interacting one-dimensional fermions with the transversal confinement*, F. Deuretzbacher, and L. Santos, Phys. Rev. A **96**, 013629 (2017); arXiv:1706.06513.

15. *Quantum droplets in one-dimensional dipolar Bose-Einstein condensates*, C. Mishra, D. Edler, F. Wächtler, R. Nath, S. Sinha, and L. Santos, Phys. Rev. Lett. **119**, 050403 (2017); arXiv:1610.09176.
16. *Spin-chain model for strongly interacting one-dimensional Bose-Fermi mixtures*, F. Deuretzbacher, D. Becker, J. Bjerlin, S. M. Reimann, and L. Santos, Phys. Rev. A **95**, 043630 (2017); arXiv:1611.04418.
17. *Long-range transverse Ising model built with dipolar condensates in two-well arrays*, Y. Li, W. Pang, J. Xu, C. Lee, B. A. Malomed, and L. Santos, New J. Phys. **19**, 013030 (2017); arXiv:1608.04831.
18. *Schwebende Quantentröpfchen*, Falk Wächtler und Luis Santos, Physik Journal **2**, 22 (2017).
19. *Quantum-fluctuation-driven crossover from a dilute Bose-Einstein condensate to a macro-droplet in a dipolar quantum fluid*, L. Chomaz, S. Baier, D. Petter, M. J. Mark, F. Wächtler, L. Santos, and F. Ferlaino, Phys. Rev. X **6**, 041039 (2016); arXiv:1607.06613.
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21. *Improvement of an atomic clock using squeezed vacuum*, I. Kruse, K. Lange, J. Peise, B. Lücke, L. Pezzè, J. Arlt, W. Ertmer, C. Lisdat, L. Santos, A. Smerzi, and C. Klempt, Phys. Rev. Lett. **117**, 143004 (2016); arXiv:1605.07754.
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23. *Momentum distributions and numerical methods for strongly interacting one-dimensional spinor gases*, F. Deuretzbacher, D. Becker, and L. Santos, Phys. Rev. A **94**, 023606 (2016); arXiv:1602.06804.
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26. *Density-induced geometric frustration of ultra-cold bosons in optical lattices*, T. Mishra, S. Greschner, and L. Santos, New J. of Phys. **18**, 045016 (2016); arXiv:1512.01138.
27. *Topological phases of lattice bosons with a dynamical gauge field*, D. Raventós, T. Graß, B. Juliá-Díaz, L. Santos, and M. Lewenstein, Phys. Rev. A **93**, 033605 (2016); arXiv:1511.08010.
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29. *Antiferromagnetic Heisenberg spin chain of few cold atoms in a one-dimensional trap*, S. Murmann, F. Deuretzbacher, G. Zürn, J. Bjerlin, S. M. Reimann, L. Santos, T. Lompe, and S. Jochim, Phys. Rev. Lett. **115**, 215301 (2015); arXiv:1507.01117.
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