

Publication list of Prof. Luis Santos

Preprints

1. *Heat transport in a Coulomb ion crystal with a topological defect*, L. Timm, H. Weimer, L. Santos, and T. E. Mehlstäubler, arXiv:2306.05845.
2. *Particle dynamics and ergodicity-breaking in twisted-bilayer optical lattices*, G. C. Paul, P. Recher, and L. Santos, arXiv:2306.01588.
3. *Non-equilibrium dynamics of dipolar polarons* A. G. Volosniev, G. Bighin, L. Santos, and L. A. Peña Ardila, arXiv:2305.17969.
4. *Impurities in quasi-one-dimensional droplets of binary Bose mixtures*, S. Sinha, S. Biswas, L. Santos, and S. Sinha, arXiv:2304.04261.
5. *Self-bound crystals of antiparallel dipolar mixtures*, M. Arazo, A. Gallemí, M. Guilleumas, R. Mayol, and L. Santos, arXiv:2303.02087.
6. *Momentum-selective pair creation of spin excitations in dipolar bilayers*, T. Bilitewski, G. A. Domínguez-Castro, D. Wellnitz, A. M. Rey, and L. Santos, arXiv:2302.09059.
7. *Excited-state phase diagram of a ferromagnetic quantum gas*, B. Meyer-Hoppe, F. Anders, P. Feldmann, L. Santos, and C. Klempt, arXiv:2301.10655.
8. *Quantum simulation of dynamical phase transitions in noisy quantum devices*, Y. Javanmard, U. Liaubaite, T. J. Osborne, and L. Santos, arXiv:2211.08318.

9. *Tomography of a number-resolving detector by reconstruction of an atomic many-body quantum state*, M. Hetzel, L. Pezzè, C. Pür, M. Quensen, A. Hüper, J. Geng, J. Kruse, L. Santos, W. Ertmer, A. Smerzi, and C. Klempt, arXiv:2207.01270.

Papers in Journals

10. *Transversal effects on the ground-state of hard-core dipolar bosons in one-dimensional optical lattices*, Authors: H. Korbmacher, G. A. Domínguez-Castro, W. Li, J. Zakrzewski, and L. Santos, Phys. Rev. A (in press, 2023); arXiv:2303.07217.
11. *Role of interaction-induced tunnelling in the dynamics of polar lattice bosons*, A. S. Aramthottil, K. Lacki, L. Santos, and J Zakrzewski, Phys. Rev. B **107**, 104305 (2023); arXiv:2209.11644
12. *Catalyzation of supersolidity in binary dipolar condensates*, D. Scheiermann, L. A. Peña Ardila, T. Bland, R. N. Bisset, and L. Santos, Phys. Rev. A **107**, L021302 (2023); arXiv:2202.08259.
13. *Lattice control of non-ergodicity in a polar lattice gas*, H. Korbmacher, P. Sierant, W. Li, X. Deng, J. Zakrzewski, and L. Santos, Phys. Rev. A **107**, 013301 (2023); arXiv:2207.06186.
14. *Droplet arrays in doubly-dipolar Bose-Einstein condensates*, R. Ghosh, C. Mishra, L. Santos, and R. Nath, Phys. Rev. A **106**, 063318 (2022); arXiv:2210.01093.
15. *Creation and robustness of quantized vortices in a dipolar supersolid when crossing the superfluid-to-supersolid transition*, M. Šindik, A. Recati, S. M. Roccuzzo, L. Santos, S. Stringari, Phys. Rev. A **106**, L061303 (2022); arXiv:2206.14100.

16. Superfluid properties of a honeycomb dipolar supersolid, A. Gallemí and L. Santos, Phys. Rev. A **106**, 063301 (2022); arXiv:2209.10450.
17. *Alternating-domain supersolids in binary dipolar condensates*, T. Bland, E. Poli, L. A. Peña Ardila, L. Santos, F. Ferlaino, and R. N. Bisset, Phys. Rev. A **106**, 053322 (2022); arXiv:2203.11119.
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19. *Anomalous buoyancy of quantum bubbles in immiscible Bose mixtures* D. Edler, L. A. Peña Ardila, C. R. Cabrera, and L. Santos, Phys. Rev. Research **4**, 033017 (2022); arXiv:2204.00606.
20. *Two-dimensional supersolidity in a circular trap*, T. Bland, E. Poli, C. Politi, L. Klaus, M. A. Norcia, F. Ferlaino, L. Santos, and R. N. Bisset, Phys. Rev. Lett. **128**, 195302 (2022); arXiv:2107.06680.
21. *Hilbert space shattering and disorder-free localization in polar lattice gases*, W. Li, X. Deng, and L. Santos, Phys. Rev. Lett. **127**, 260601 (2021); arXiv:2103.13780.
22. *Maintaining supersolidity in one and two dimensions*, E. Poli, T. Bland, C. Politi, L. Klaus, M. A. Norcia, F. Ferlaino, R. N. Bisset, and L. Santos, Phys. Rev. A **104**, 063307 (2021); arXiv:2108.02682.
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28. *Interferometric order parameter for excited-state quantum phase transitions in Bose-Einstein condensates*, P. Feldmann, C. Klempt, A. Smerzi, L. Santos, and M. Gessner, Phys. Rev. Lett. **126**, 230602 (2021); arXiv:2011.02823.
29. *Cluster dynamics in two-dimensional lattice gases with inter-site interactions*, W. Li, A. Dhar, X. Deng, and L. Santos, Phys. Rev. A **103**, 043331 (2021); arXiv:2012.02663.
30. *Quantum droplets of dipolar mixtures*, R. N. Bisset, L. A. Peña Ardila, and L. Santos, Phys. Rev. Lett. **126**, 025301 (2021); arXiv:2007.00404.
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34. *Self-bound doubly-dipolar Bose-Einstein condensates*, C. Mishra, L. Santos, and R. Nath, Phys. Rev. Lett. **124**, 073402 (2020); arXiv:1907.08190.
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38. *Viewpoint: A quasicrystal for quantum simulations*, L. Santos, Physics **12**, 31 (2019).
39. *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.

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