

## Publications of the SFB/TR49 according to projects, 2007 - 2019

### A03

A. Dhar, C. Baals, B. Santra, A. Müllers, R. Labouvie, T. Mertz, I. Vasić, A. Cichy, H. Ott, and W. Hofstetter

*Transport of Strongly Correlated Bosons in an Optical Lattice*  
Phys. Status Solidi B **256**, 1800752 (2019)

M. Barbier, A. Geißler, and W. Hofstetter

*Decay-dephasing-induced steady states in bosonic Rydberg-excited quantum gases in an optical lattice*  
Phys. Rev. A **99**, 033602 (2019)

J. Panas, M. Pasek, A. Dhar, T. Qin, A. Geißler, M. Hafez-Torbati, M. Sorantin, I. Titvinidze, and W. Hofstetter

*Density-wave steady-state phase of dissipative ultracold fermions with nearest-neighbor interactions*  
Phys. Rev. B **99**, 115125 (2019)

U. Bornheimer, I. Vasić, and W. Hofstetter

*Phase transitions of the coherently coupled two-component Bose gas in a square optical lattice*  
Phys. Rev. A **96**, 063623 (2017)

A. Geißler, I. Vasić, and W. Hofstetter

*Condensation versus long-range interaction: Competing quantum phases in bosonic optical lattice systems at near-resonant Rydberg dressing*  
Phys. Rev. A **95**, 063608 (2017)

A. Golubeva, A. Sotnikov, A. Cichy, J. Kunes, and W. Hofstetter

*Breaking of  $SU(4)$  symmetry and interplay between strongly correlated phases in the Hubbard model*  
Phys. Rev. B **95**, 125108 (2017)

U. Bissbort, W. Hofstetter, and D. Poletti

*Operator-based derivation of phonon modes and characterization of correlations for trapped ions at zero and finite temperature*  
Phys. Rev. B **94**, 214305 (2016)

T. Mertz, I. Vasić, M. Hartmann, and W. Hofstetter

*Photonic currents in driven and dissipative resonator lattices*  
Phys. Rev. A **94**, 013809 (2016)

Y. Li, L. He, and W. Hofstetter

*Magnetic phase transitions of spin-1 ultracold bosons in a cubic optical lattice*  
Phys. Rev. A **93**, 033622 (2016)

T. Yin, D. Cocks, and W. Hofstetter

*Polaronic effects in one- and two-band quantum systems*

Phys. Rev. A **92**, 063635 (2015)

A. Sotnikov and W. Hofstetter

*Magnetic Ordering of Three-Component Ultracold Fermionic Mixtures in Optical Lattices*

Phys. Rev. A **89**, 063601 (2014) [abstract, arXiv:1402.3397]

I. Vidanovic, D. Cocks, and W. Hofstetter

*Dissipation through localised loss in bosonic systems with long-range interactions*

Phys. Rev. A **89**, 053614 (2014) [abstract, arXiv:1402.0011]

U. Bissbort, D. Cocks, A. Negretti, Z. Idziaszek, T. Calarco, F. Schmidt-Kaler, W. Hofstetter, R. Gerritsma

*Emulating Solid-State Physics with a Hybrid System of Ultracold Ions and Atoms*

Phys. Rev. Lett. **111**, 080501 (2013). [abstract, arXiv:1304.4972]

see also accompanying Physics Synopsis and Press Release

Peter P. Orth, Daniel Cocks, Stephan Rachel, Michael Buchhold, Karyn Le Hur, and Walter Hofstetter

*Correlated Topological Phases and Exotic Magnetism with Ultracold Fermions*

J. Phys. B: At. Mol. Opt. Phys. **46** (2013) 134004. [abstract, arXiv:1212.5607]

see also LabTalk - When a topological insulator becomes interacting - IOP Science

A. Sotnikov, M. Snoek, and W. Hofstetter

*Magnetic phases of mass- and population-imbalanced ultracold fermionic mixtures in optical lattices*

Phys. Rev. A **87**, 053602 (2013). [abstract, arXiv:1301.1691]

J. Pohlmann, A. Privitera, I. Titvinidze, and W. Hofstetter

*Trion and dimer formation of three-color fermions*

Phys. Rev. A **87**, 023617 (2013). [abstract, arXiv:1211.3598]

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*Time-Reversal-Invariant Hofstadter-Hubbard Model with Ultracold Fermions*

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*Quantum phases of Bose-Bose mixtures on a triangular lattice*

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*Loss-induced phase separation and pairing for 3-species atomic lattice fermions*  
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*Detecting the Amplitude Mode of Strongly Interacting Lattice Bosons by Bragg Scattering*  
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*An atomic colour superfluid via three-body loss*

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*Mobile bound states of Rydberg excitations in a lattice*  
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Tobias Lausch, Artur Widera, and Michael Fleischhauer  
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**A06**

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