

LIST OF PUBLICATIONS OF ALESSIO RECATI

Publications in Journals with peer review process:

1. *Rotating a supersolid dipolar gas*
S. M. Roccuzzo, A. Gallemí, **A. Recati***, S. Stringari
accepted to be publ. in PRL [journals.aps.org/prl/accepted/6d070YffXd51fa68090d5e906353f8d6f7c23d14e]
2. *Spin-dipole mode in a trapped Fermi gas near unitarity*
H. Tajima, **A. Recati**, Y. Ohashi
Phys. Rev. A 101, 013610 (2020)
3. *Supersolid symmetry breaking from compressional oscillations in a dipolar quantum gas*
L. Tanzi, S. M. Roccuzzo, E. Lucioni, F. Famà, A. Fioretti, C. Gabbanini, G. Modugno, **A. Recati***, S. Stringari
Nature 574, 382 (2019)
4. *Decay of the relative phase domain wall into confined vortex pairs: the case of a coherently coupled bosonic mixture*
A. Gallemí, L. P. Pitaevskii, S. Stringari, **A. Recati**
Phys. Rev. A 100, 023607 (2019)
5. *Collisions of Self-Bound Quantum Droplets*
G. Ferioli, G. Semeghini, L. Masi, G. Giusti, G. Modugno, M. Inguscio, A. Gallemí, **A. Recati***, and Marco Fattori
Phys. Rev. Lett. 122, 090401 (2019) - *corresponding Author
6. *Breaking of Goldstone modes in a two-component Bose-Einstein condensate*
A. Recati and F. Piazza
Phys. Rev. B 99, 064505 (2019)
7. *Dynamics of multiple atoms in one-dimensional fields*
C. Cascio, J. C. Halimeh, I. P. McCulloch, **A. Recati**, I. de Vega
Phys. Rev. A 99, 013845 (2019)
8. *Simulation of two-boson bound states using arrays of driven-dissipative coupled linear optical resonators*
M. A. Gorlach, M. Di Liberto, **A. Recati**, I. Carusotto, A. N. Poddubny, C. Menotti
Phys. Rev. A 98, 063625 (2018)
9. *Localisation Transition in the Driven Aubry-André Model*
D. Romito, C. Lobo, **A. Recati**
Eur. Phys. J. D 72, 135 (2018)
10. *Magnetic defects in an unbalanced mixture of two Bose-Einstein condensates*
A. Gallemí, L. P. Pitaevskii, S. Stringari, **A. Recati**
Phys. Rev. A 97, 063615 (2018)
11. *Particle-hole character of the Higgs and Goldstone modes in strongly-interacting lattice bosons*
M. Di Liberto, **A. Recati***, N. Trivedi, I. Carusotto, C. Menotti
Phys. Rev. Lett. 120, 073201 (2018) - *corresponding Author
12. *Andreev-Bashkin effect in superfluid cold gases mixtures*
J. Nespolo, G. Astrakharchik, **A. Recati**
New J. Phys. 19, 125005 (2017)
13. *Coherent oscillations in small Fermi-polaron systems*
M. Tylutki, G. E. Astrakharchik, and **A. Recati**
Phys. Rev. A 96, 063603 (2017)

14. *Two-body bound and edge states in the extended SSH Bose-Hubbard model*
M. Diliberto, **A. Recati**, I. Carusotto, N. Trivedi, C. Menotti
EPJ-ST 226, 2751 (2017)
15. *Exploring the ferromagnetic behaviour of a repulsive Fermi gas through spin dynamics*
G. Valtolina, F. Scazza, A. Amico, A. Burchianti, **A. Recati**, T. Enss, M. Inguscio, M. Zaccanti, G. Roati
Nature Physics 13, 704 (2017)
16. *Repulsive Fermi polarons in a resonant mixture of ultracold Li-6 atoms*
F. Scazza, G. Valtolina, P. Massignan, **A. Recati**, A. Amico, A. Burchianti, C. Fort, M. Inguscio, M. Zaccanti, G. Roati
Phys. Rev. Lett. 118, 083602 (2017) - Editor's suggestion
17. *Casimir forces and quantum friction from Ginzburg radiation in atomic BECs*
J. Marino, **A. Recati**, I. Carusotto
Phys. Rev. Lett. 118, 045301 (2017)
18. *Two-body physics in the Su-Schrieffer-Heeger model*
M. Di Liberto, **A. Recati**, I. Carusotto, C. Menotti
Phys. Rev. A 94, 062704 (2016)
19. *Confinement and precession of vortex pairs in coherently coupled Bose-Einstein condensates*
M. Tylutki, L. P. Pitaevskii, **A. Recati**, S. Stringari
Phys. Rev. A 93, 043623 (2016)
20. *Dark-Bright Solitons in a Superfluid Bose-Fermi Mixture*
M. Tylutki, **A. Recati**, F. Dalfovo, Sandro Stringari
New J. Phys. 18, 053014 (2016) - corresponding Author
21. *Magnetic phase transition in coherently coupled Bose gases in optical lattices*
L. Barbiero, M. Abad, **A. Recati**
Phys. Rev. A 93, 033645 (2016)
22. *Momentum-dependent pseudo-spin dimers of coherently coupled bosons in optical lattices*
C. Menotti, F. Minganti, **A. Recati**
Phys. Rev. A 93, 033602 (2016)
23. *Out-of-equilibrium states and quasi-many-body localization in polar lattice gases*
L. Barbiero, C. Menotti, **A. Recati**, L. Santos
Phys. Rev. B 92, 180406(R) (2015)
24. *Spin dipole oscillation and relaxation of coherently coupled Bose-Einstein condensates*
A. Sartori, J. Marino, S. Stringari, **A. Recati**
New J. Phys. 17, 093036 (2015)
25. *Instability of the superfluid flow as black-hole lasing effect*
S. Finazzi, F. Piazza, M. Abad, A. Smerzi, **A. Recati**
Phys. Rev. Lett. 114, 245301 (2015)
26. *Counter-flow instability of a quantum mixture of two superfluids*
M. Abad, **A. Recati**, S. Stringari, F. Chevy
Eur. Phys. J. D 69, 126 (2015)
27. *A toy model for the dipolar-induced resonance in quasi-one-dimensional systems*
N. Bartolo, D. J. Papoular, **A. Recati**, C. Menotti
Eur. Phys. J. Special Topics 224, 477 (2015)
28. *Spontaneous Peierls dimerization and emergent bond order in one-dimensional dipolar gases*
M. Di Dio, L. Barbiero, **A. Recati**, M. Dalmonte
Phys. Rev. A 90, 063608 (2014)

29. *Chandrasekhar-Clogston limit and critical polarization in a Fermi-Bose superfluid mixture*
T. Ozawa, **A. Recati**, M. Delehaye, F. Chevy, S. Stringari
Phys. Rev. A 90, 043608 (2014)
30. *Persistent currents in two-component condensates in a toroidal trap*
M. Abad, A. Sartori, S. Finazzi, **A. Recati**
Phys. Rev. A 89, 053602 (2014)
31. *Dynamics of highly unbalanced Bose-Bose mixtures: miscible vs immiscible gases*
A. Sartori, **A. Recati**,
Eur. Phys. J D 67, 260 (2013)
32. *Dipolar-Induced Resonance for Ultracold Bosons in Quasi-1D Optical Lattice*
N. Bartolo, D. J. Papoular, L. Barbiero, C. Menotti, **A. Recati**
Phys. Rev. A 88, 023603 (2013)
33. *Polar molecules in bilayers with high population imbalance*
M. Klawunn, **A. Recati**
Phys. Rev. A 88, 013633 (2013)
34. *A study of coherently coupled two-component Bose-Einstein Condensates*
M. Abad, **A. Recati**
Eur. Phys. J D 67, 148 (2013)
35. *Quadrupole oscillation in a dipolar Fermi gas: Hydrodynamic versus collisionless regime*
M. Abad, **A. Recati**, S. Stringari
Phys. Rev. A 85, 033639 (2012)
36. *Quantum fluctuations around black hole horizons in Bose-Einstein condensates*
P.-E'. Larre', **A. Recati**, I. Carusotto, N. Pavloff
Phys. Rev. A 85, 013621 (2012)
37. *Non-local state-swapping of polar molecules in bilayer*
A. Pikovski, M. Klawunn, **A. Recati**, L. Santos
Phys. Rev. A 84, 061605(R) (2011)
38. *Dipolar Drag in Bilayer Harmonically Trapped Gases*
N. Matveeva, **A. Recati**, S. Stringari
Eur. Phys. J D 84, 219 (2011)
39. *Local atom number fluctuations in quantum gases at finite temperature*
M. Klawunn, **A. Recati**, L.P. Pitaevskii, S. Stringari
Phys. Rev. A 84, 033612 (2011)
40. *The Fermi-polaron in two dimensions: Importance of the two-body bound state*
M. Klawunn, **A. Recati**
Phys. Rev. A 84, 033607 (2011)
41. *Metastability in spin polarised Fermi gases and quasiparticle decays*
K. Sadeghzadeh, G. Bruun, C. Lobo, P. Massignan, **A. Recati**
New J. Phys. 13, 055011 (2011)
42. *Spin fluctuations, susceptibility and the dipole oscillation of a nearly ferromagnetic Fermi gas*
A. Recati, S. Stringari
Phys. Rev. Lett. 106, 080402 (2011)
43. *Acoustic white holes in flowing atomic Bose-Einstein condensates*
C. Mayoral, **A. Recati**, A. Fabbri, R. Parentani, R. Balbinot, I. Carusotto
New J. Phys. 13, 025007 (2011)

44. *Testing Hawking particle creation by black holes through correlation measurements*
R. Balbinot, I. Carusotto, A. Fabbri, **A. Recati**
International Journal of Modern Physics D 19, 2371 (2010).
[This essay received an honorable mention in the GRF 2010 Awards for Essays on Gravitation.
It was refereed, not as a review article, but as an essay.]
45. *Spin oscillations of the normal polarized Fermi gas at unitarity*
A. Recati, S. Stringari
Phys. Rev. A 82, 013635 (2010)
46. *Density correlations and analog dynamical Casimir emission of Bogoliubov phonons in modulated atomic Bose-Einstein condensates*
I. Carusotto, R. Balbinot, A. Fabbri, **A. Recati**
Eur. Phys. J D 569, 391 (2010)
47. *Bogoliubov Theory of acoustic Hawking radiation in Bose-Einstein Condensates*
A. Recati, N. Pavloff, I Carusotto
Phys. Rev. A 80, 043603 (2009)
48. *Chandrasekhar-Clogston limit and phase separation in Fermi mixtures at unitarity*
I. Bausmerth, **A. Recati**, S. Stringari
Phys. Rev. A 79, 043622 (2009)
49. *Unitary polarized Fermi gas under adiabatic rotation*
I. Bausmerth, **A. Recati**, S. Stringari
Phys. Rev. A 78, 063603 (2008)
50. *Numerical observation of Hawking radiation from acoustic black holes in atomic Bose-Einstein condensates*
I. Carusotto, S. Fagnocchi, **A. Recati**, R. Balbinot, A. Fabbri
New J. Phys. 10, 103001 (2008)
51. *Role of interactions in spin-polarised atomic Fermi gases at unitarity*
A. Recati, C. Lobo, S. Stringari
Phys. Rev. A 78, 023633 (2008)
52. *Nonlocal density correlations as a signature of Hawking radiation from acoustic black holes*
R. Balbinot, A. Fabbri, S. Fagnocchi, **A. Recati**, I. Carusotto
Phys. Rev. A 78, 021603(R) (2008)
53. *Complexity, noise and quantum information on atom chip*
M. A. Cirone, A. Negretti, **A. Recati**, T. Calarco
Int. J. Quant. Information 6, 633 (2008)
54. *Collisional Properties of a Polarized Fermi Gas with Resonant Interactions,*
G. M. Bruun, **A. Recati**, C. J. Pethick, H. Smith, S. Stringari
Phys. Rev. Lett. 100, 240406 (2008)
55. *Destroying superfluidity rotating a Fermi gas at unitarity*
I. Bausmerth, **A. Recati**, S. Stringari
Phys. Rev. Lett. 100, 070401 (2008)
56. *Radiation induced force between two planar waveguides*
F. Riboli, **A. Recati**, M. Antezza, I. Carusotto
Eur. Phys. J. D 46, 157 (2008)
57. *Increasing entanglement through engineered disorder*
D. Binosi, G. De Chiara, S. Montangero, **A. Recati**
Phys. Rev. B 76, 140405(R) (2007)

58. *Normal state of highly polarized Fermi gases: simple many-body approaches*
R. Combescot, **A. Recati**, C. Lobo, F. Chevy
Phys. Rev. Lett. 98, 180402 (2007)
59. *Quantum control theory for decoherence suppression in quantum gates*
T. Calarco, M. Cirone, M. Cozzini, A. Negretti, **A. Recati**
Int. J. Quantum Information 5, 207 (2007)
60. *Oscillating Casimir force between impurities in one-dimensional Fermi liquids*
J. N. Fuchs, **A. Recati**, W. Zwerger
Phys. Rev. A 75, 043615 (2007)
61. *High-fidelity entanglement via molecular dissociation in integrated atom optics*
B. Zhao, Z.-B. Chen, J.-W. Pan, J. Schmiedmayer, **A. Recati**, G. E. Astrakharchik, T. Calarco
Phys. Rev. A 75, 042312 (2007)
62. *Normal state of a polarized Fermi gas at unitarity*
C. Lobo, **A. Recati**, S. Giorgini, S. Stringari
Phys. Rev. Lett 97, 200403 (2006)
63. *Spin polarizability of a trapped superfluid Fermi gas*
A. Recati, I. Carusotto, C. Lobo, S. Stringari
Phys. Rev. Lett 97, 190403 (2006)
64. *Pair correlations of an expanding superfluid Fermi gas*
C. Lobo, I. Carusotto, S. Giorgini, **A. Recati**, S. Stringari
Phys. Rev. Lett 97, 100405 (2006)
65. *Photon energy lifter*
Z. Gaburro, M. Ghulinyan, F. Riboli, L. Pavesi, **A. Recati**, I. Carusotto
Optics Express 14 , 7270 (2006)
66. *Fast Rydberg gates without dipole blockade via quantum control*
M. Cozzini, T. Calarco, **A. Recati**, P. Zoller
Optics Communications 264 , 375 (2006)
67. *Photon recycling in Fabry-Perot micro-cavities based on Si₃N₄ waveguides*
F. Riboli, **A. Recati**, N. Daldosso, L. Pavesi, G. Pucker, A. Lui, S. Cabrini, E. Di Fabrizio
Photonics and Nanostructures - Fund. and Appl. 4, 41 (2006)
68. *Casimir forces between defects in one-dimensional quantum liquids*
A. Recati, J.-N. Fuchs, C. S. Peça, W. Zwerger, W.
Phys. Rev. A 72, 023616 (2005)
69. *Boson-Fermion Resonance Model in One Dimension*
A. Recati, J.-N. Fuchs, W. Zwerger,
Phys. Rev. A 71, 033630 (2005)
70. *Atomic quantum dots coupled to a Reservoir of a Superfluid Bose-Einstein condensate*
A. Recati, P. O. Fedichev, W. Zwerger, J. von Delft, P. Zoller
Phys. Rev. Lett. 94, 040404 (2005)
71. *Performance of quantum phase gates with cold trapped atoms*
A. Negretti, T. Calarco, M.A. Cirone, **A. Recati**,
Eur. Phys. J. D 32, 119 (2005)
72. *Exactly solvable model of the BCS-BEC crossover*
J.-N. Fuchs, **A. Recati**, W. Zwerger
Phys. Rev. Lett. 93, 090408 (2004)
73. *Vortex liquids and vortex quantum Hall states in trapped rotating Bose gases*
U. R. Fischer, P. O. Fedichev, **A. Recati**
Phys. Rev. A 011602(R) (2004)

74. *Zero Temperature Damping of Bose-Einstein condensate oscillations by vortex-antivortex pair creation*
U. R. Fischer, P. O. Fedichev, **A. Recati**
J. Phys. B 37, S301 (2004)
75. *Fermi 1D quantum gas: Luttinger liquid approach and spin-charge separation*
A. Recati, P. O. Fedichev, W. Zwerger, P. Zoller
J. Opt. B: Quantum Semiclass. Opt. 5, S55 (2003)
76. *Spin-charge separation in ultra-cold quantum gases*
A. Recati, P. O. Fedichev, W. Zwerger, P. Zoller
Phys. Rev. Lett. 90, 020401 (2003)
77. *Holonomic quantum computation with neutral atoms*,
A. Recati, T. Calarco, P. Zanardi, J. I. Cirac, P. Zoller
Phys. Rev. A 66, 032309 (2002)
78. *Overcritical Rotation of a Trapped Bose-Einstein Condensate*,
A. Recati, F. Zambelli, S. Stringari
Phys. Rev. Lett. 86, 377 (2001)

Chapters in Books:

1. **Recati A.** (2016):
Coherently Coupled Bose Gases
Proceedings of the International School of Physics “E. Fermi” Course 191 - Quantum Matter at Ultralow Temperatures - Ed. M. Inguscio, W. Ketterle, S. Stringari,
(IOS Press), 463-483.
2. Balbinot R., Carusotto I., Fabbri A., Mayoral C. and **Recati A.** (2013):
Understanding Hawking Radiation from Simple Models of Atomic Bose-Einstein Condensates
in Analogue Gravity Phenomenology: Analogue Spacetimes and Horizons, from Theory to Experiment, Ed. Faccio, D., Belgiorno, F., Cacciatori, S., Gorini, V., Liberati, S., Moschella, U.,
Lecture Notes in Physics vol.870 (Springer), 181-220.
3. **Recati A.**, Stringari, S. (2012):
Normal phase of Polarized strongly interacting gas
in The BCS-BEC Crossover and the Unitary Fermi Gas, Ed. Zwerger, W.,
Lecture Notes in Physics vol.836 (Springer), 447-476.

Editorials:

Editor for the EPJ ST on “Novel quantum phases and mesoscopic physics in quantum gases”
Editorial: *Novel quantum phases and mesoscopic physics in quantum gases*
Eur. Phys. J. Special Topics 217, 1 (2013),
R. Citro, A. Minguzzi, E. Orignac, **A. Recati**, T. Roscilde;
Eur. Phys. J. Special Topics 224, 1 (2015),
F. Chevy, R. Citro, A. Minguzzi, **A. Recati**, G. Lamporesi, T. Roscilde, F. Illuminati;
Eur. Phys. J. Special Topics 226, 2693 (2017).

Popular Science:

A. Recati (2007): *Il mondo dei quanti (The quantum world)* in Italian, Treccani-Scuola (On line encyclopedia Treccani) [http://www.treccani.it/scuola/lezioni/in_aula/fisica/quanti/mainArea.html].

Publication List Alessio Recati