Appendix: Scientific productions

• books ;

• scientific productions (by team) ;

The following referencing has been adopted: [T1-n] for the regular peer reviewed articles of team 1 etc, [CSP-n] for the production involving members of different teams (Common Scientific Production). The corresponding publications authored by researchers appointed since Jan. 1ˢᵗ 2008 are gathered under [P-n] and finally [T1-Mn] stands for the proceedings, chapters in books, etc, of team 1.

1) Books

1a) Monography

Mézard M. ; Montanari A.
Information, Physics and Computation
Oxford University Press (2009)

Texier C.
Mécanique quantique, cours et exercices corrigés pour licence 3, master, capes, agrégation
Editions Dunod (2011)

1b) Proceedings edition

Brazovskii S. ; Kirova N. ; Monceau P.
Proceedings of the International Workshop on Electronic crystals ECRYS 2008
Physica B, condensed Matter, Volume 404, Issue 3-4
Elsevier (2009)

Jacobsen J. ; Ouvry S. ; Pasquier V. ; Serban D. ; Cugliandolo L.
Exact Methods in Low-dimensional Statistical Physics and Quantum Computing
Lecture Notes of the Les Houches Summer School: Volume 89, July 2008
Oxford University Press (2010)

Brazovskii S. ; Kirova N. ; Monceau P.
Proceedings of the International Workshop on Electronic crystals ECRYS 2011
Physica B, condensed Matter, Volume 407, Issue 11
Elsevier (2012)

Salomon C. ; Shlyapnikov G.V. ; Cugliandolo L.
Many-Body Physics with Ultracold Gases
Lecture Notes of the Les Houches Summer School: Volume 94, July 2010
Oxford University Press (2012)

2) Scientific productions (peer reviewed in international journals)

Team 1 – Condensed matter, quantum fluids

[T1-1] Ahokas J. ; Järvinen J. ; Shlyapnikov G. V. ; Vasiliev S.
Clock shift in high field magnetic resonance of atomic hydrogen
Physical Review Letters **101** (2008) 263003

[T1-2] Albert M. ; Paul T. ; Pavloff N. ; Leboeuf P.
Dipole oscillations of a Bose-Einstein condensate in the presence of defects and disorder
Physical Review Letters **100** (2008) 250405

[T1-3] Baranov M.A. ; Lobo C. ; Shlyapnikov G.V.
Superfluid pairing between fermions with unequal masses
Physical Review A **78** (2008) 033620

[T1-4] Bienaimé T. ; Texier C.
Localization for one-dimensional random potentials with large local fluctuations
Journal of Physics A **41** (2008) 475001

[T1-5] Brazovskii S. ; Matveenko S.I.
Theory of subgap interchain tunnelling in quasi one-dimensional conductors
Physical Review B **77** (2008) 155432

[T1-6] Brazovskii S.
New routes to solitons in quasi one-dimensional conductors
Solid State Science **10** (2008) 1786

[T1-7] Burovski E. ; Kozik E. ; Prokof'ev N. ; Svistunov B. ; Troyer M.
Critical temperature curve in BEC-BCS crossover
Physical Review Letters **101** (2008) 090402

[T1-8] Burovski E. ; Fehske H. ; Mishchenko A.S.
Exact treatment of exciton-polaron formation by diagrammatic Monte Carlo simulations
Physical Review Letters **101** (2008) 116403

[T1-9] Carmier P. ; Ullmo D.
Berry phase in graphene: a semiclassical perspective
Physical Review B **77** (2008) 245413

[T1-10] Chung B. ; Jolicoeur Th.
Fermions out of dipolar bosons in the lowest Landau level
Physical Review A **77** (2008) 043608

[T1-11] Colomé-Tatché M.
Two-component repulsive Fermi gases with population imbalance in elongated harmonic traps
Physical Review A **78** (2008) 033612

[T1-12] Ferrier M. ; Rowe A.C.H. ; Guéron S. ; Bouchiat H. ; Texier C. ; Montambaux G.
Geometrical dependence of decoherence by electronic interactions in a GaAs/GaA/As square network
Physical Review Letters **100** (2008) 146802

[T1-13] Feve G. ; Degiovanni P. ; Jolicoeur Th.
Quantum detection of electronic flying qubits in the integer quantum Hall regime
Physical Review B **77** (2008) 035308

[T1-14] Frahm H. ; Vekua T.
The Mott metal-insulator transition in the 1D Hubbard model in an external magnetic field
Journal of Statistical Mechanics (2008) P01007

[T1-15] Hagendorf C. ; Texier C.
Breaking of supersymmetry in one-dimensional a random Hamiltonian
Journal of Physics A **41** (2008) 405302

[T1-16] Kamchatov A.M. ; Pitaevskii L.P.
Stabilization of solitons generated by a supersonic flow of Bose-Einstein condensate past an obstacle
Physical Review Letters **100** (2008) 160402

[T1-17] Levinsen J. ; Cooper N.R. ; Gurarie V.
Stability of fermionic gases close to a p-wave Feshbach resonance
Physical Review A **78** (2008) 063616

[T1-18] Marcelis B. ; Kokkelmans S.J.J.M.F. ; Shlyapnikov G.V. ; Petrov D.S.
Collisional properties of weakly bound heteronuclear dimers
Physical Review A **77** (2008) 032707

[T1-19] Nath R. ; Pedri P. ; Santos L.
Stability of dark solitons in three dimensional dipolar Bose-Einstein condensates
Physical Review letters **101** (2008) 210402

[T1-20] Olofsson H. ; Aberg S. ; Leboeuf P.
Semiclassical theory of Bardeen-Cooper-Schrieffer pairing-gap fluctuations
Physical Review Letters **100** (2008) 037005

[T1-21] Orso G. ; Pitaevski L.P. ; Stringari S.
Equilibrium and dynamics of a trapped superfluid Fermi gas with unequal masses
Physical Review A **77** (2008) 033611

[T1-22] Papoular D.J. ; Cladé P. ; Polyakov S.V. ; McCormick C.F. ; Migdall A.L. ; Lett P.D.
Measuring optical tunneling times using a Hong-Ou-Mandel interferometer
Optics Express **16** (2008) 16005

[T1-23] Pedri P. ; De Palo S. ; Orignac E. ; Citro R. ; Chiofalo M.L.
Collective excitations of trapped one-dimensional dipolar quantum gases
Physical Review A **77** (2008) 015601

[T1-24] Peterson M.R. ; Jolicoeur Th. ; Das Sarmas S.
Finite-Layer thickness stabilizes the pfaffian state for the 5/2 fractional quantum hall effect: wave function overlap and topological degeneracy
Physical Review Letters **101** (2008) 016807

[T1-25] Peterson M.R. ; Jolicoeur Th. ; Das Sarma S.
Orbital Landau level dependence of the fractional quantum Hall effect in quasi-two-dimensional electron layers: finite-thickness effects
Physical Review B **78** (2008) 155308

[T1-26] Ramazashvili R.
Kramers degeneracy in a magnetic field and zeeman spin-orbit coupling in antiferromagnetic conductors
Physical Review Letters **101** (2008) 137202

[T1-27] Regnault N. ; Goerbig M.O. ; Jolicoeur Th.
Bridge between abelian and non-abelian fractional quantum Hall states
Physical Review Letters **101** (2008) 066803

[T1-28] Texier C.
On the spectrum of the Laplace operator of metric graphs attached at a vertex – spectral determinant approach
Journal of Physics A **41** (2008) 085207

[T1-29] Tomsovic S. ; Ullmo D. ; Bäcker A.
Residual Coulomb interaction fluctuations in chaotic systems: the boundary, random plane waves, and semiclassical theory
Physical Review Letters **100** (2008) 164101

[T1-30] Treiner J. ; Caupin F. ; Cole M.W. ; Balibar S.
Absolute limit for the capillary rise of a fluid
Europhysics Letters **82** (2008) 56004

[T1-31] Ullmo D.
Many-body physics and quantum chaos
Reports on Progress in Physics **71** (2008) 026001

[T1-32] Watanabe G. ; <u>Orso G</u>. ; Dalfovo F. ; Pitaevskii L.P. ; Stringari S.
Equation of state and effective mass of the unitary Fermi gas in a one-dimensional periodic potential
Physical Review A **78** (2008) 063619

[T1-33] <u>Burovski E. ; Orso G. ; Jolicoeur Th.</u>
Multi-particule composites in density-imbalanced quantum fluids
Physical Review Letters **103** (2009) 215301

[T1-34] Cooper N.R. ; <u>Shlyapnikov G.V.</u>
Stable topological superfluid phase of ultracold polar fermionic molecules
Physical Review Letters **103** (2009) 155302

[T1-35] <u>Deuar P</u>.
Simulation of complete many-body quantum dynamics using controlled quantum-semiclassical hybrids
Physical Review Letters **103** (2009) 130402

[T1-36] <u>Deuar P. ;</u> Sykes A.G. ; Gangardt D.M. ; Davis M.J. ; Drummond P.J. ; Kheruntsyan K.V.
Nonlocal pair correlations in the one-dimensional Bose gas a finite temperature
Physical Review A **79** (2009) 043619

[T1-37] Essler F.H.L. ; <u>Shlyapnikov G.V. ;</u> Tsvelik A.M.
On the spin-liquid phase of one-dimensional spin-1 bosons
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[T1-38] Imambekov A. ; Mazets I.E. ; <u>Petrov D.S</u>. ; and al.
Density ripples in expanding low-dimensional gases as a probe of correlations
Physical Review A **80** (2009) 033604

[T1-39] Kaul R.K. ; <u>Ullmo D. ;</u> Zarand G. ; Chandrasekharan S. ; Baranger H.U.
Ground state and excitations of quantum dots with magnetic impurities
Physical Review B **80** (2009) 035318

[T1-40] <u>Levinsen J</u>. ; Tiecke T.G. ; Walraven J.T.M. ; <u>Petrov D.S.</u>
Atom-dimer scattering and long-lived trimers in fermionic mixtures
Physical Review Letters **103** (2009) 153202

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Pairing in ultracold Fermi gases in the lowest Landau level
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Physical Review A **80** (2009) 033625

[T1-45] Paul T. ; <u>Albert M. ;</u> Schlagheck P. ; <u>Leboeuf P. ; Pavloff N.</u>
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Physical Review A **80** (2009) 033615

[T1-46] <u>Ramazashvili R.</u>
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Physical Review B **79** (2009) 184432
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[T1-47] Recati A. ; <u>Pavloff N</u>. ; Carusotto I.
Bogoliubov theory of acoustic Hawking radiation in Bose-Einstein condensates
Physical Review A **80** (2009) 043603

[T1-48] <u>Rojo-Bravo A</u>. ; <u>Brazovskii S</u>.
Self-trapping and binding of particules from singular pockets in weakly doped AFM mott insulator
Journal of Superconductivy and Novel Magnetism **22** (2009) 229-233

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Quenches in quantum many-body systems: One-dimensional Bose-Hubbard model reexamined
Physical Review A **79** (2009) 021608

[T1-50] <u>Texier C</u>. ; Delplace P. ; Montambaux G.
Quantum oscillations and decoherence due to electron-electron interaction in metallic networks and hollow cylinders
Physical Review B **80** (2009) 205413

[T1-51] <u>Texier C</u>. ; Hagendorf C.
One-dimensional classical diffusion in a random force field with weakly concentrated absorbers
Europhysics Letters **86** (2009) 37011

[T1-52] <u>Ullmo D</u>. ; Tomsovic S. ; Bäcker A.
Semiclassical theory of nonlocal statistical measures: Residual Coulomb interactions
Physical Review E **79** (2009) 056217

[T1-53] <u>Vekua T</u>. ; Matveenko S.I. ; <u>Shlyapnikov G.V</u>.
Curvature effects on magnetic susceptibility of 1D attractive two component fermions
JETP Letters **90** (2009) 289-294

[T1-54] Zomer F. ; Fedala Y. ; <u>Pavloff N</u>. ; Soskov V. ; Variola A.
Polarization induced instabilities in external four-mirror Fabry-Perot cavities
Applied Optics **48** (2009) 6651-6661

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Comment on "Clock shift in High field magnetic resonance of atomic hydrogen"
Physical Review Letters **104** (2010) 099302

[T1-56] <u>Albert M</u>. ; <u>Leboeuf P</u>.
Localization by bichromatic potentials versus Anderson localization
Physical Review A **81** (2010) 013614

[T1-57] <u>Albert M</u>. ; <u>Paul T. ; Pavloff N. ; Leboeuf P</u>.
Breakdown of the superfluidity of a matter wave in a random environment
Physical Review A **82** (2010) 011602(R)

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A finite-temperature phase transition for disordered weakly interacting bosons in one dimension
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[T1-59] Almeida J. ; <u>Roux G</u>. ; Poiblanc D.
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Physical Review B **82** (2010) 041102(R)

[T1-60] <u>Brazovskii S</u>. ; Kirova N.
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[T1-61] Brun C. ; Wang Z.Z. ; Monceau P. ; <u>Brazovskii S</u>.
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Physical Review Letters **104** (2010) 256403

[T1-62] Carmier P. ; Lewenkopf C. ; Ullmo D.
Graphene *n-p* junction in a strong magnetic field: A semiclassical study
Physical Review B **81** (2010) 241406 (R)

[T1-63] Choi A. ; and al ; Brazovskii S. and al
Suppression of the magneto resistance in High electric fields of polyacetylene nanofibers
Synthetic Metals **160** (2010) 1349-1353

[T1-64] Colomé-Tatché M. ; Matveenko S.I. ; Shlyapnikov G.V.
Finite-size effects for the gap in the excitation Spectrum of the one-dimensional Hubbard model
Physical Review A **81** (2010) 013611

[T1-65] Feigel'man M.V. ; Ioffe L.B. ; Kravtsov V.E. ; Cuevas E.
Fractal superconductivity near localization threshold
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[T1-67] Kang N. ; Salameh B. ; Auban Senzier P. ; Jérome D. ; Pasquier C.R. ; Brazovskii S.
Domain walls at the spin-density-wave endpoint of the organic superconductor $(TMTSF)_2$ PF_6 under pressure
Physical Review B **81** (2010) 100509

[T1-68] Kollath C. ; Roux G. ; Biroli G. ; Länchli A.
Statistical properties of the Spectrum of the extended Bose-Hubbard model
Journal of Statistical Mechanics (2010) P08011

[T1-69] Leboeuf P. ; Moulieras S.
Superfluid motion of light
Physical Review Letters **105** (2010) 163904

[T1-70] Matveenko S.I.
Vortex structures of rotating Bose-Einstein condensates in an anisotropic harmonic potential
Physical Review A **82** (2010) 033628

[T1-71] Milovanovic M.V. ; Jolicoeur Th.
Fractional quantum Hall states with negative flux: edge modes in some Abelian and non-Abelian cases
International Journal of Modern Physics B **24** (2010) 549-566

[T1-72] Nonne H. ; Lecheminant P. ; Capponi S. ; Roux G. ; Boulat E.
Haldane charge conjecture in one-dimensional multicomponent fermionic cold atoms
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[T1-73] Orso G. ; Burovski E. ; Jolicoeur Th.
Luttinger liquid of trimers in Fermi gases with unequal masses
Physical Review Letters **104** (2010) 065301

[T1-74] Papoular D.J. ; Shlyapnikov G.V. ; Dalibard J.
Microwave-induced Fano-Feshbach resonances
Physical Review A **81** (2010) 041603

[T1-75] Pikovski A. ; Klawunn M. ; Shlyapnikov G.V. ; Santos L.
Interlayer superfluidity in bilayer systems of fermionic polar molecules
Physical Review Letters **105** (2010) 215302

[T1-76] Roccia J. ; Leboeuf P.
Level density of a Fermi gas and integer partitions: A Gumbel-like finite-size correction
Physical Review C **81** (2010) 044301

[T1-77] Roux G.
Finite-size effects in global quantum quenches: Examples from free bosons in an harmonic trap and the one-dimensional Bose-Hubbard model
Physical Review A **81** (2010) 053604

[T1-78] Roux G.
Reply to "Comment on 'Quenches in quantum many-body systems: One-dimensional Bose-Hubbard model reexamined'"
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Journal of Physics A **43** (2010) 025002

[T1-81] Yusupov R.; Brazovskii S. ; and al
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Nature Physics **6** (2010) 681-684

[T1-82] Bernier J.-S. ; Roux G. ; Kollath C.
Slow quench dynamics of a one-dimensional Bose gas confined to an optical lattice
Physical Review Letters **106** (2011) 200601

[T1-83] Bouillot P. ; Kollath C. ; Lauchli A.M. ; Zvonarev M. ; and al.
Statics and dynamics of weakly coupled antiferromagnetic spin-1/2 ladders in a magnetic field
Physical Review B **83** (2011) 054407

[T1-84] Carmier P. ; Lewenkopf C. ; Ullmo D.
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[T1-85] Colomé-Tatché M. ; Petrov D.S.
Parametric excitation of a 1D gas in integrable and nonintegrable cases
Physical Review Letters **106** (2011) 125302

[T1-86] Crépin F. ; Laflorencie N. ; Roux G. ; Simon P.
Phase diagram of hard-core bosons on clean and disordered two-leg ladders: Mott insulator – Luttinger liquid – Bose glass
Physical Review Letters **84** (2011) 054517

[T1-87] Delplace P. ; Ullmo D. ; Montambaux G.
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Physical Review B **84** (2011) 195452

[T1-88] Drummond N.D. ; Cooper N.R. ; Needs R.J. ; Shlyapnikov G.V.
Quantum Monte Carlo calculation of the zero-temperature phase diagram of the two-component fermionic hard-core gas in two dimensions
Physical Review B **83** (2011) 195429

[T1-89] Jolicoeur Th. ; Luque J.-G.
Highest weight Macdonald and Jack polynomials
Journal of Physics A **44** (2011) 055204

[T1-90] Lavarélo A. ; Roux G. ; Laflorencie N.
Melting of a frustration-induced dimmer crystal and incommensurability in the J_1-J_2 two-leg ladder
Physical Review B **84** (2011) 144407

[T1-91] Levinsen J. ; Petrov D.S.
Atom-dimer and dimer-dimer scattering in fermionic mixtures near a narrow Feshbach resonance
The European Physical Journal D **65** (2011) 67-82

[T1-92] Levinsen J. ; Cooper N.R. ; Shlyapnikov G.V.
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[T1-99] Treiber M. ; Texier C. ; Yevtushenko O.M. ; von Delft J. ; Lerner I.V.
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[T1-107] Larré P.É. ; Recati A. ; Carusotto I. ; Pavloff N.
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Team 2 – Statistical physics, dynamical systems

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