Curriculum vitae

Frédéric Chevy

1 Academic records

2012/-: Professor at École Normale Supérieure (Laboratoire Kastler-Brossel; classe exceptionnelle since 9/2019.
2010/-: Assistant professor (*Professeur chargé de cours*) at École Polytechnique.
2008: Habilitation degree. Title: *From the wake of insects to ultra-cold Fermi gases, dynamics of classical and quantum fluids.*
2003/2010: Teaching assistant (*Précepteur*) at ESPCI.
2003/2012: Assistant professor (*Maître de conférence*) at École Normale Supérieure (Laboratoire Kastler Brossel).
2001/2003: Postdoc in the group of interfacial hydrodynamics at Laboratoire de physique de la matière condensée (Collège de France). Supervisors: D. Quéré and E. Raphaël.
1999/2003: Teaching assistant (*Agrégé préparateur*) at École Normale Supérieure.
1998/2001: PhD of quantum physics at Laboratoire Kastler Brossel (École normale supérieure, ENS). Title: *Dynamics of a Bose-Einstein condensate*; Supervisor: J. Dalibard.
1994/1998: Undergraduate studies at École normale supérieure.

2 Distinctions, awards and research grants

2023: "Prix des trois physiciens" laureate
2022: CNRS grant Tremplin, 25 k€.
2021: CNRS grant 80 Prime (with A. Aftalion EHESS), 125 k€.
2019: Sirteq grant "équipement mi-lourd" (Région Ile de France)
2017: Del Duca Foundation Research Grant awardee
2016: Peter Wall Institute for Advanced Studies French Scholar Series awardee
2012: ERC Consolidator grant laureate
2008/2013: Junior member of Institut universitaire de France.

3 Administrative activities

2023/-: Member of bureau "quantum processes" of CNRS 2030 prospective.
2021/-: member of PSL's 'groupe de travail partage des savoirs'.
2021: member of the ERC PE2 Starting Grant evaluation panel

Spring 2020: reviewer for the Quantum Technologies Flagship program.
2019/-: Head of doctoral school EDPIF (*École Doctorale Physique en Île de France*).
2013/19: Head of Studies of the ENS Physics Department.
2011/13: Director of the "Parcours Physique Quantique" of the Master ICFP.
2003/2009: Head of the Physics L3 at ENS.
2012/-: Member of the Scientific Committee of *Science Ouverte*. Organizer of the yearly physics outreach program of the association (organization of science 'camps' on physics ('23: Earth sciences, in collaboration with ENS Earth science departement; '22: Measures in physics; '20: Physics of complex systems; '19: Physics of Sport; '18: Light; '17: Gravitational waves; '16: everyday life physics; '15: Magic of Fluids; '14: temperature; '12: the Higgs Boson; '11: Special Relativity).
2012/18: Member of the Editorial Board of PRA.
Referee at PRL, PRA, NJP, EPL, EPJD, Science, Nature Physics...
Referee for funding agencies: ANR, NSF, ANR, ISF (Israelian Science Foundation), ERC, NSERC/CRSNG (Canada), RGC (Research Grants Council, Hong Kong)
2009/2017: member of the board of the GDR Physique Quantique Mésoscopique.
2011: co-organizer with Christophe Salomon of the International Workshop on Ultracold Fermi Mixtures (Paris, 60 participants)
2012: co-organizer with Jean Dalibard of the ICAP summer school (Paris, 100 participants)
2012: member of the organizing committee of the BEC conference (Lyon, 100 participants)
2013: co-organizer with G. Fève and B. Plaçais of the International Workshop on Frontier between atomic and solid state physics (Paris 90 participants)
2015: member of the organizing committee of the 2015 Sant Feliu BEC conference.
2022: co-organization with A. Aftalion of Maths-Physics meeting on superfluidity, solitons and dissipation (25 participants)
Member of PhD committees:Andrea Litvinov (2023, LPL, Villetaneuse), Giovanni Pecci (2022, Grenoble), Brice Ravon (2022, LKB, président du jury), Andrea Muni (2021, LKB, chair of the committee), Alexandre Pricoupenko (2021, LPTMS, chair of the committee), Nils Günther (2021, ICFO Barcelona, Chair of the committee), Yanliang Guo (2020, LPL Villetaneuse), Tom Maddalena (2020, Ecole Polytechnique), E. Neri (2019, LENS, Florence), G. Berthet (2019, institut d'optique, committee president), H. Cayla (2018, Institut d'optique, referee), V. Denechaud (2018, Institut d'optique, referee), T. Congy (2017, Orsay, committee president), S. Serafini (2017, Trento, referee), S. Garcia (2015, LKB, committee president), G. Condon (2015, LCAR Toulouse), M. Labousse (2014, UPMC), V. Freulon (2014, LPA, ENS, committee president), W. Ngampruetikorn (2014, Cambridge), S. Maëro (2013, LPA, ENS, committee president), Lucas Béguin (2013, IOTA, referee); Vincent Dugrain (2012, SYRTE, President of the committee); F. Jendrejewski (2012, Institut d'Optique, referee); T. Liennard (2011, Laboratoire de Physique des lasers, referee); I. Bausmerth (2009, Trento); J.P. Brantut (2009, Institut d'Optique, referee)
Member of Habilitation committees: S. Nascimbene (2020); G. Quemener (2019); B. Laburthe-Tolra (2013, LPL Villetaneuse, committee president).

Member of hiring committees: Villetaneuse University, Maitre de conférences position, chair of the committee (May 2023);
Referee for PhDs: A. Amico (2018, LENS, Florence, referee); S. Hoinka (2014, Melbourne); L. Sidorenkov (2013, Innsbruck); M. Wolak (2013, Singapore).

4 Supervision of graduate students

Lovro Barisic (2022/-)
Arnaud Bigué (2020/-)
Clément de Daniloff (2018/2021) *In-situ thermometry and spin transport in fermionic quantum wires*:
Markus Bohlen (2016/2020), *Sound Propagation and Quantum-Limited Damping in an Ultracold Two-Dimensional Fermi Gas*,
Cédric Enesa (2015/2019), *Experimental realization of a strongly interacting 1D fermi gas*
Thomas Reimann (2015/2019), *Resonant spin dynamics and 3D-1D dimensional crossovers in ultracold Fermi gases*
Matthieu Pierce (2015/2019), *Impureté dans un gaz de Fermi à deux composantes*
Sébastien Laurent (2013/2017), *Dynamics and stability of a Bose-Fermi mixture : counterflow of superfluids and inelastic decay in a strongly interacting gas*
Marion Delehaye (2012/2016), *Mixtures of superfluids*
Daniel Suchet (2012/2016): *Simulating the dynamics of harmonically trapped Weyl particles with cold atoms*
Michael Rabinovic (2012/2016): *Quasithermalization of fermions in a quadrupole potential and evaporative cooling of 40K to quantum degeneracy*
Norman Kretzschmar (2011/2015), *Experiments with Ultracold Fermi Gases : quantum Degeneracy of Potassium-40 and All-solid-state Laser Sources for Lithium*
Franz Sievers (2010/2014), *Ultracold Fermi mixtures and simultaneous sub-Doppler laser cooling of fermionic 6Li and 40K*
Diogo Rio-Fernandes (2011/2014), *Trapping and cooling of fermionic alkali atoms to quantum degeneracy : Sub-Doppler cooling of Potassium-40 and Lithium-6 in gray molasses*
Igor Ferrier-Barbut (2011/2014), *Mixtures of Bose and Fermi Superfluids*
Benno Rem (2009/2013), *The road to the unitary bose gas*
Ulrich Eismann (2008/2012), *A novel all-solid-state laser source for lithium atoms and three-body recombination in the unitary Bose gas*
Armin Ridinger (2007/2011), *Towards quantum degenerate Fermi mixtures : photoassociation of weakly bound 6Li40K molecules*
Thomas Salez (2007/2011), *Towards quantum degenerate atomic Fermi mixtures : design of the experiment and magnetic transport of lithium 6 - potassium 40*
Nir Navon (2007/2011), *Thermodynamics of ultracold Bose and Fermi gases*
Sylvain Nascimbène (2006/2010), *Thermodynamics of ultracold Bose and Fermi gases*
Leticia Tarruell (2004/2008), *Superfluidité dans un gaz de fermions ultrafroids*

Martin Teichmann (2004/2007), *Atomes de lithium-6 ultra froids dans la transition BEC-BCS : expëriences et construction d'un montage expérimental*

5 Publications

5.1 Publications in refereed journals

Bibliometry: Google scholar page

1. *The Phantom Glass Mystery: a transition from dry to lubricated friction.* P.E. Galy, I. Huin-Senis, L. Bocquet, F. Chevy, hal-04047877v1

2. *Achieving one-dimensionality with attractive fermions*, F. Chevy, G. Orso, Phys. Rev. A **107**, 043317 (2023), arXiv:2211.01013

3. *Anisotropic Zitterbewegung Dynamics in Synthetic Non-Abelian Gauge Fields*, M, Hasan, C. Sriram Madasu, K. D. Rathod, C. Chi Kwong, C. Miniatura, F. Chevy, D. Wilkowski, Phys. Rev. Lett. **129**, 130402 (2022), arXiv:2201.00885

4. *Mean-field vs RPA calculation of the energy of an impurity immersed in a spin 1/2 superfluid*, A. Bigué, F. Chevy, X. Leyronas, Phys. Rev. A **105**, 033314 (2022) hal-03558877.

5. *In Situ Thermometry of Fermionic Cold-Atom Quantum Wires*, C. De Daniloff, M. Tharrault, C. Enesa, C. Salomon, F. Chevy, T. Reimann, J. Struck, Phys. Rev. Lett. **127**, 113602 (2021)

6. *Roadmap on Atomtronics: State of the art and perspective*, L. Amico *et al.*, AVS Quantum Sci. **3**, 039201 (2021)

7. *An impurity immersed in a double Fermi Sea*, R. Alhyder, X. Leyronas, and F. Chevy, Phys. Rev. A **102**, 033322 (2020), hal-02554044.

8. *Quasi-thermalization of collisionless particles in quadrupole potentials*, J. Lau, O. Goulko, T. Reimann, D. Suchet, C. Enesa, F. Chevy, and C. Lobo, Phys. Rev. A **101**, 033605 (2020), arXiv:1910.13866.

9. *Few vs many-body physics of an impurity immersed in a superfluid of spin 1/2 attractive fermions*, M. Pierce, X. Leyronas, F. Chevy, Phys. Rev. Lett. **123**, 080403 (2019).

10. *Optical conductivity of a quantum gas*, R. Anderson, F. Wang, P. Xu, V. Venu, S. Trotzky, F. Chevy, J. H. Thywissen, Phys. Rev. Lett. **122**, 153602 (2019); arXiv:1712.09965

11. *Hydrodynamic response of a trapped superfluid to a periodic perturbation*, S. Jin, S. Laurent and F. Chevy, Eur. Phys. J. Special Topics **227**, 2263-2273 (2019)

12. *Nonlinear dynamics of coupled superfluids*, S. Laurent, P. Parnaudeau, F. Chevy and I. Danaila, arXiv:1904.07040v1.

13. *Non-Abelian adiabatic geometric transformations in a cold Strontium gas*, F. Leroux, K. Pandey, R. Rebhi, F. Chevy, C. Miniatura, B. Grémaud, D. Wilkowski, Nature Communications **9**, 3580 (2018); arXiv:1802.08418

14. *Collective modes of an imbalanced unitary Fermi gas*, J. Hofmann, F. Chevy, O. Goulko, C. Lobo, Phys. Rev. A **97**, 033613 (2018); arXiv:1712.02181

15. *The popsicle-stick cobra wave*, J.-P. Boucher, C. Clanet, D. Quéré, F. Chevy, Phys. Rev. Lett. **119**, 084301 (2017), hal-01474623; Highlighted in Le Monde, Physics: Focus, Pour la Science and the Big Bang Theory.

16. *Long-range mediated interactions in a mixed-dimensional system*, D. Suchet, Z. Wu, F. Chevy, G. M. Bruun, Phys. Rev. A **95**, 043643 (2017), arXiv:1702.08129;

17. *Connecting few-body inelastic decay to many-body correlations: a weakly coupled impurity in a resonant Fermi gas*, S. Laurent, M. Pierce, M. Delehaye, T. Yefsah, F. Chevy, C. Salomon, Phys. Rev. Lett. **118**, 103403 (2017), arXiv:1612.08279;

18. *Strongly correlated Bose gases*, F. Chevy and C. Salomon, J. Phys. B **49**, 192001 (2016), arXiv:1611.06871;

19. *Hydrodynamic spectrum of a superfluid in an elongated trap*, P.-P. Crépin, X. Leyronas, F. Chevy, Europhysics Letters **114** 60005 (2016), arXiv:1607.00218;

20. *Quasi-thermalization of non-interacting particles in a quadrupole potential: Analog simulation of Weyl fermions*, D. Suchet, M. Rabinovic, T. Reimann, N. Kretzschmar, F. Sievers, C. Salomon, J. Lau, O. Goulko, C. Lobo, F. Chevy, Europhysics Letters **114**, 26005 (2016), arXiv:1507.02106.

21. *Universal Loss Dynamics in a Unitary Bose Gas*, U. Eismann, L. Khaykovich, S. Laurent, I. Ferrier-Barbut, B. S. Rem, A. T. Grier, M. Delehaye, F. Chevy, C. Salomon, L.-C. Ha, C. Chin, Phys. Rev. X **6**, 021025 (2016), arXiv:1505.04523.

22. *Critical Velocity and Dissipation of an ultracold Bose-Fermi Counterflow*, M. Delehaye, S. Laurent, I. Ferrier-Barbut, S. Jin, F. Chevy, C. Salomon, Phys. Rev. Lett. **115**, 265303 (2015), arXiv:1510.06709

23. *Counterflow in a doubly superfluid mixture of Bosons and Fermions*, F. Chevy, Phys. Rev. A **91**, 063606 (2015), arXiv:1505.05370.

24. *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), arXiv:1411.7560.

25. *Wave drag on a submerged sphere*, A. Benusiglio, F. Chevy, E. Raphaël, and C. Clanet, Physics of Fluids **27**, 072101 (2015)

26. *Simultaneous sub-Doppler laser cooling of fermionic 6Li and 40K on the D1 line: Theory and Experiment*, F. Sievers, S. Wu, N. Kretzschmar, D. Rio Fernandes, D. Suchet, M. Rabinovic, C. V. Parker, L. Khaykovich, C. Salomon, F. Chevy, Phys. Rev. A **91**, 023426 (2015), arXiv:1410.8545.

27. *Momentum distribution of a dilute unitary Bose gas with three-body losses*, S. Laurent, X. Leyronas, F. Chevy, Phys. Rev. Lett. **113**, 220601 (2014), arXiv:1312.0079.

28. *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), arXiv:1405.7187.

29. *A Mixture of Bose and Fermi Superfluids*, I. Ferrier-Barbut, M. Delehaye, S. Laurent, A.T. Grier, M. Pierce, B.S. Rem, F. Chevy, C. Salomon, Science **345**, 1035 (2014); arXiv:1404.2548.

30. *Condensation Energy of a Spin-1/2 Strongly Interacting Fermi Gas*, N. Navon, S. Nascimbène, X. Leyronas, F. Chevy, C. Salomon, Phys. Rev. A **88**, 063614 (2013); arXiv:1304.1661.

31. *Spin Drag of a Fermi Gas in a Harmonic Trap*, O. Goulko, F. Chevy, C. Lobo, Phys. Rev. Lett. **111**, 190402 (2013); arXiv:1307.6395

32. Λ*-enhanced Sub-Doppler Cooling of Lithium Atoms in D1 Gray Molasses*, A. T. Grier, I. Ferrier-Barbut, B. S. Rem, M. Delehaye, L. Khaykovich, F. Chevy, C. Salomon, Phys. Rev. A **87**, 063411 (2013); arXiv:1304.6971.

33. *2.1-watts intracavity-frequency-doubled all-solid-state light source at 671 nm for laser cooling of lithium*, U. Eismann, A. Bergschneider, C. Salomon, F. Chevy, Optics Express **21**, 9091 (2013); arXiv:1301.0449.

34. *Lifetime of the Bose Gas with Resonant Interactions* B. S. Rem, A. T. Grier, I. Ferrier-Barbut, U. Eismann, T. Langen, N. Navon, L. Khaykovich, F. Werner, D. S. Petrov, F. Chevy, C. Salomon, Phys. Rev. Lett. **110**, 163202 (2013); arXiv:1212.5274.

35. *Sub-Doppler laser cooling of fermionic* ^{40}K *atoms in three-dimensional gray optical molasses*, D. Rio Fernandes, F. Sievers, N. Kretzschmar, S. Wu, C. Salomon, F. Chevy, Europhys. Lett. **100**, 63001 (2012), arXiv:1210.1310.

36. *Liquid Hertz Contact: softness of weakly deformed drops on non-wetting substrates*, F. Chevy, A. Chepelianskii, D. Quéré, E. Raphaël, Europhys. Lett. **100** 54002 (2012); arXiv:1209.5377.

37. *The p-wave polaron*, J. Levinsen, P. Massignan, F. Chevy and C. Lobo, Phys. Rev. Lett. **109**, 075302 (2012), arXiv:1203.6881.

38. *Boltzmann equation simulation for a trapped Fermi gas of atoms*, O. Goulko, F. Chevy, and C. Lobo, New J. Phys. **14** 073036 (2012); arXiv:1201.6235.

39. *Collision of two spin polarized fermionic clouds*, O. Goulko, F. Chevy and C. Lobo, Phys. Rev. A **84**, 051605(R) (2011), arXiv:1106.5773.

40. *Photoassociative creation of ultracold heteronuclear* $^6Li^{40}K^*$ *molecules*, A. Ridinger, S. Chaudhuri, T. Salez, D. Rio Fernandes, N. Bouloufa, O. Dulieu, C. Salomon, F. Chevy, Europhys. Lett. **96**, 33001 (2011), arXiv:1108.0618.

41. *Wave resistance for capillary gravity waves: Finite size effects*, M. Benzaquen, F. Chevy and E. Raphaël, Europhys. Lett. **96** 34003 (2011).

42. *Application of lasers to ultracold atoms and molecules*, H. Perrin, P. Lemonde, V. Josse, B. Laburthe-Tolra, F. Chevy and D. Comparat, arXiv:1102.1327, Comptes rendus - Physique **12**, 417 (2011).

43. *Wave drag on floating bodies*, M. Le Merrer, C. Clanet, D. Quéré, E. Raphaël, and F. Chevy, PNAS **108**, 15064 (2011), highlighted in physorg.com .

44. *Dynamics and Thermodynamics of the Low-Temperature Strongly Interacting Bose Gas*, N. Navon, S. Piatecki, K. Günter, B. Rem, T. C. Nguyen, F. Chevy, W. Krauth and C. Salomon, Phys. Rev. Lett. **107**, 135301 (2011); arXiv:1103.4449.

45. *An all-solid-state laser source at 671 nm for cold atom experiments with lithium*, U. Eismann, F. Gerbier, C. Canalias, G. Trénec, J. Vigué, F. Chevy and C. Salomon, Appl. Phys. B **106**, 25 (2012), arXiv:1103.5841.

46. *Large atom number dual-species magneto-optical trap for fermionic* ^6Li *and* ^{40}K *atoms*, A. Ridinger, S. Chaudhuri, T. Salez, U. Eismann, D. Rio Fernandes, D. Wilkowski, F. Chevy, and C. Salomon, EPJD **65**, 223(2011); arXiv:1103.0637.

47. *A new Fermi liquid: the normal phase of a strongly interacting gas of cold atoms*, S. Nascimbène, N. Navon, S. Pilati, F. Chevy, S. Giorgini, A. Georges, C. Salomon, Phys. Rev. Lett. **106**, 215303 (2011), arXiv:1012.4664.

48. *Ultra-cold Polarized Fermi gases*: F. Chevy and C. Mora, Rep. Prog. Phys. **73** 112401 (2010), arXiv:1003.0801.

49. *The equation of state of ultracold Bose and Fermi gases: a few examples*, S. Nascimbène, N. Navon, F. Chevy and C. Salomon, New Journal of Physics, **12** 103026 (2010); arXiv:1006.4052.

50. *The normal phase of an imbalanced Fermi gas*, C. Mora and F. Chevy, Phys. Rev. Lett. **104**, 230402 (2010), arXiv:1003.0213.

51. *The Ground State of a Fermi Gas with Tunable Interactions*: N. Navon, S. Nascimbène, F. Chevy, and C. Salomon, Science **328**, 729 (2010); arXiv:1004.1465.

52. *Exploring the Thermodynamics of a Universal Fermi Gas*: S. Nascimbène, N. Navon, K. Jiang, F. Chevy, and C. Salomon, Nature **463**, 1057 (2010); arXiv:0911.0747; Highlighted in News and Views.

53. *Self-consistent theory of capillarity-wave generation by small moving objects* A. D. Chepelianskii, M. Schindler, F. Chevy, E. Raphaël, Phys. Rev. E **81**, 016306 (2010), arXiv:0910-1.1775.

54. *Ground state of a tightly bound composite dimer immersed in a Fermi Sea*: C. Mora and F. Chevy, Phys. Rev. A **80**, 033607 (2009), arXiv:0908.0608; Highlighted in APS Physics Synopsis, September 14, 2009.

55. *Collective Oscillations of an Imbalanced Fermi Gas: Axial Compression Modes and Polaron Effective Mass*: S. Nascimbène, N. Navon, K. Jiang, L. Tarruell, M. Teichmann, J. Mckeever, F. Chevy, C. Salomon, Phys. Rev. Lett. **103**, 170402 (2009); arXiv:0907.3032.

56. *On capillary-gravity waves generated by a slow moving object*: A. Chepelianskii, F. Chevy and E. Raphaël, Phys. Rev. Lett. **100**, 074504 (2008) , arXiv:0704.3990.

57. *Normal State of Highly Polarized Fermi Gases: Simple Many-Body Approaches*: R. Combescot, A. Recati, C. Lobo, and F. Chevy, Phys. Rev. Lett. **98**, 180402 (2007), arXiv:cond-mat/0702314.

58. *Shape and instability of free-falling liquid globules*: É. Reyssat, F. Chevy, A.-L. Biance, L. Petitjean and D. Quéré, Europhys. Lett. **80**, 34005 (2007).

59. *Universal phase diagram of a strongly interacting Fermi gas with unbalanced spin populations*: F. Chevy, Phys. Rev. A 74, 063628 (2006), cond-mat/0605751.

60. *Phase separation in a strongly interacting Fermi gas with unbalanced populations*: F. Chevy, Phys. Rev. Lett. **96**, 130401 (2006), cond-mat/0601122.

61. *Low lying twisting and acoustic modes of a rotating Bose-Einstein condensate*: F. Chevy, Phys. Rev. A **73**, 041604(R) (2006), cond-mat/0511547.

62. *On the elasticity of a liquid shock*: A.-L. Biance, F. Chevy, G. Lagubeau, C. Clanet and D. Quéré, Journal of Fluid Mechanics **554**, 47 (2006).

63. *Resonant scattering properties close to a p-wave Feshbach resonance*: F. Chevy, E.G.M. Van Kempen, T. Bourdel, J. Zhang , L. Khaykovich, M. Teichmann, L. Tarruell, S.J.J.M.F. Kokkelmans and C. Salomon, Phys. Rev. A **71**, 062710 (2005), cond-mat/0412393.

64. *P-wave Feshbach resonances of ultra-cold* ^{6}*Li*: J. Zhang , E.G.M. Van Kempen, T. Bourdel, L. Khaykovich, J. Cubizolles, F. Chevy, M. Teichmann, L. Tarruell, S.J.J.M.F. Kokkelmans, C. Salomon, Phys. Rev. A **70**, 030702 (2004), quant-ph/0406085.

65. *Experimental Study of the BEC-BCS Crossover Region in Lithium 6*: T. Bourdel, L. Khaykovich, J. Cubizolles, J. Zhang, F. Chevy, M. Teichmann, L. Tarruell, S. J. J. M. F. Kokkelmans, and C. Salomon Phys. Rev. Lett. **93**, 050401 (2004), cond-mat/0403091.

66. *Shape oscillation of a rotating Bose-Einstein condensate*: S. Stock, V. Bretin, F. Chevy and J. Dalibard, Europhys. Lett. **65**, 594 (2004), cond-mat/0311099.

67. *Kelvin modes of a fast rotating Bose-Einstein condensate*: F. Chevy and S. Stringari, Phys. Rev. A **68**, 053601 (2003), cond-mat/0305559.

68. *Water spring: a model for bouncing drops*: K. Okumura, F. Chevy, C. Clanet, D. Richard and D. Quéré, Europhys. Lett. **62**, 237-243 (2003), cond-mat/0212151.

69. *Capillary-gravity waves: a "fixed-depth" analysis*: F. Chevy and E. Raphaël, Europhys. Lett. **61**, 796 (2003), cond-mat/0210082.

70. *Quadrupole Oscillation of a Single-Vortex Condensate: Evidence for Kelvin Modes*: V. Bretin, P. Rosenbusch, F. Chevy, G.V. Shlyapnikov and J. Dalibard, Phys. Rev. Lett. **88**, 250403 (2002), cond-mat/0211101.

71. *Critical rotation of a harmonically trapped Bose gas*: P. Rosenbusch, D.S. Petrov, S. Sinha, F. Chevy, V. Bretin, Y. Castin, G. Shlyapnikov and J. Dalibard, Phys. Rev. Lett. **88**, 250402 (2002);

72. *Transverse Breathing Mode of an Elongated Bose-Einstein condensate*: F. Chevy, V. Bretin, P. Rosenbusch, K. W. Madison and J. Dalibard, Phys. Rev. Lett. **88**, 250403 (2002).

73. *Interferometric detection of a single vortex in a dilute Bose-Einstein condensate*: F. Chevy, K.W. Madison, V. Bretin and J. Dalibard, Phys. Rev. A **64**, 031601 (2001).

74. *Stationary States of a Rotating Bose-Einstein Condensate: Routes to Vortex Nucleation*: K.W. Madison, F. Chevy, V. Bretin and J. Dalibard, Phys. Rev. Lett. **86**, 4443 (2001).

75. *Nucleation of quantized vortices in a gaseous Bose-Einstein condensate*: F. Chevy, K.W. Madison, V. Bretin and J. Dalibard, C. R. Acad. Sci Paris, t. 2, série IV, 663 (2001).

76. *An atom faucet*: W. Wohlleben, F. Chevy, K. Madison and J. Dalibard, Eur. Phys. J. D **15**, 237 (2001).

77. *Measurement of the Angular Momentum of a Rotating Bose-Einstein Condensate*: F. Chevy, K.W. Madison and J. Dalibard, Phys. Rev. Lett. **85**, 2223 (2000).

78. *Vortex lattice in a Bose-Einstein Condensate*: K.W. Madison, F. Chevy, W. Wohlleben and J. Dalibard, Rev. Mod. Opt. **47**, 2715 (2000).

79. *Vortex Formation in a Stirred Bose-Einstein Condensate*: K.W. Madison, F. Chevy, W. Wohlleben and J. Dalibard, Phys. Rev. Lett. **84**, 806 (2000).

80. *Three-body decay of a rubidium Bose-Einstein condensate*: J. Söding , D. Guéry-Odelin , P. Desbiolles , F. Chevy , H. Inamori and J. Dalibard. Appl. Phys. B, **69**, 257 (1999).

81. *Coherent acoustic mode oscillation and damping in silver nanoparticles*: N. Del Fatti, C. Voisin, F. Chevy, F. Vallée, and C. Flytzanis, J. Chem. Phys. **110**, 11484 (1999).

82. *Localization of cesium atoms on a three-dimensional lattice in momentum space*: C. Triché, F. Chevy and G. Grynberg Phys. Rev. A **58**, R38 (1998).

5.2 Book chapters

1. *Thermodynamics of Fermi gases*, F. Chevy and C. Salomon, in *The BCS-BEC crossover and the Unitary Fermi gas*, W. Zwerger Editor, Springer (2011).

2. *Bose-Einstein condensation of atomic gases*, F. Chevy and J. Dalibard, in *The physics of unusual superfluids*, K. H. Bennemann and J. B. Ketterson Editors, Oxford University Press.

3. *Vortices in Bose-Einstein condensates*, F. Chevy, in *Emergent Nonlinear Phenomena in Bose-Einstein Condensates: Theory and Experiment*, P.G. Kevrekidis, D.J. Frantzeskakis, and R. Carretero-González, Ricardo (Eds.), Springer Series on Atomic, Optical, and Plasma Physics (2008).

5.3 Conference proceedings

1. *Ultracold Fermi gases as quantum Simulators of condensed matter physics*, F. Chevy, Proceedings of the 2010 les Houches school on *Many-Body Physics with Ultracold gases* (Editors: C. Salomon, G. Shlyapnikov and L.F. Cugliandolo);

2. *Thermodynamics of the unitary Fermi gas*, F. Chevy, S. Nascimbène, N. Navon, K. Jiang, C. Lobo and C. Salomon, J. Phys.: Conf. Ser. 264 012012 (2011);

3. *Unitary polarized Fermi gases*, F. Chevy, Proceedings of 2006 Enrico Fermi on Fermi gases, arXiv:cond-mat/0701350;

4. *Expansion of a lithium gas in the BEC-BCS crossover*, J. Zhang, E.G.M. van Kempen, T. Bourdel, L. Khaykovich, J. Cubizolles, F. Chevy, M. Teichmann, L. Tarruell, S.J.J.M.F. Kokkelmans, C. Salomon, Proceedings of ICAP 2004;

5. *Formation of quantized vortices in a gaseous Bose-Einstein condensate*, F. Chevy, K. Madison, V. Bretin and J. Dalibard, "Proceedings of trapped particules and fundamental physics workshop", Comptes rendus de l'Académie des sciences, Série IV Physique Astrophysique **2**, 663 (2001); ArXiv: cond-mat/0104218;

6. *Vortex lattices in a stirred Bose-Einstein condensate*, K. W. Madison, F. Chevy, W. Wohlleben and J. Dalibard., Proceedings of ICAP 2000 Journal of Modern Optics **47**, 2715 (2000); ArXiv: cond-mat 0004037;

6 Oral presentations

6.1 Invited talks in conferences

1. August 2022, *Ultracold fermions in quantum wires*, Conference on Frontiers in Quantum and Mesoscopic Thermodynamcics (FQMT) 22 (Prague)

2. May 2022, *Ultracold fermions in quantum wires*, Conference Atomtroniccs 2022 (Benasque, Spain)

3. September 2021, *the 2N+1 many-body body problem; an impurity immersed in a spin 1/2 ferminonic superfluid*, Quantum 2021 : Dynamics and local control of impurities in complex quantum environments (Orsay)

4. June 2021, *Optical conductivity of ultracold atoms in optical lattices*, Conference "Atomtronics 2021" (Online/Abou-Dabi)

5. December 2019, *The 2N+1-body problem: an impurity immersed in a spin 1/2 fermionic superfluid*, Workshop "Polaron in the XXIst century" (Erwin Schrodinger Institute, Vienna, Austria)

6. July 2019, *The 2N+1-body problem: an impurity immersed in a spin 1/2 fermionic superfluid*, Workshop on quantum mixtures (Trento, Italy)

7. May 2019, *Dynamics of ultracold Fermi gases: Gross-Pitaevskii and beyond*, Mean-field and other effective models in mathematical

   physics (les Treilles, France);

8. May 2019, *The 2N+1-body problem: an impurity immersed in a spin 1/2 fermionic superfluid*, Workshop on atomtronics (Benasque, Spain);

9. October 2018, *The 2N+1-body problem: an impurity immersed in a spin 1/2 fermionic superfluid*, Precision Many-Body Physics Workshop (Amherst, MA, USA);

10. May 2018, *Polaron dynamics in strongly correlated systems*, DAMOP Conference (Fort Lauderdale, FL, USA);

11. December 2017, *One, two, three, many: few body losses in many-body ensembles*, Croucher Conference on Frontiers in Atomic Physics (Hong Kong);

12. August 2017, *Landau's critical velocity in trapped gases*, Advances in mathematical modelling and numerical simulation of superfluids (Rouen, France);

13. June 2017, *From ultracold to ultrafast, two examples of analogue simulation using cold atoms*, Frontiers of Quantum and Mesoscopic Thermodynamics (Prague, Czech Republic)

14. April 2017, *One, two, three, many: few body losses in many-body ensembles*, EMMI Workshop From Few to Many, Exploring Quantum one atom at a time (Obergurgl, Austria)

15. September 2016, *Bose-Fermi dual superfluids*, Conference on Multicomponent Atomic Condensates and ROtational dynamics (MACRO) (Newcastle, UK)

16. September 2016, *From ultraslow to Ultrafast, analogue simulation of Weyl particles using cold-atoms*, Workshop on Many-Body Dynamics and Open Quantum Systems (Glasgow)

17. June 2016, *Counterflowing superfluids*, New Challenges in Mathematical Modeling and Numerical Simulation of Superfluids (Marseille)

18. February 2016, *Dynamics of ultracold Fermi gases: Gross-Pitaevskii and beyond*, Fields Institute's workshop on Computation of Quantum Systems in Cold-matter Physics and Chemistry, (Toronto, Canada)

19. January 2016, *From ultracold to ultrafast, two examples of analogue simulation using cold atoms*, Workshop SU(N), gauge fields and cold atoms, (Singapore)

20. September 2015, *Bose-Fermi Superfluid Mixtures*, CIFAR Quantum Materials Program Meeting (Montréal, Canada)

21. September 2015, *Counterflowing superfluid mixtures*, BEC Conference (Sant Feliu, Spain)

22. July 2015, *Double Superfluidity of Bose-Fermi mixtures*, Frontiers of Quantum and Mesoscopic Thermodynamics (Prague, Czech Republic)

23. July 2015, *Double Superfluidity of Bose-Fermi mixtures*, ICTP Workshop on Interaction fermions (Trieste, Italy)

24. June 2015, *Double Superfluidity of Bose-Fermi mixtures*, Polatom Conference, (Bad Honnef, Germany)

25. June 2014, *The Unitary Bose Gas*, KITPC Conference "Precision Tests of Many-Body Physics with Ultracold Quantum Gases", (Beijing, China)

26. July 2013, *Thermodynamics of strongly correlated Fermions*, "Frontiers of Quantum and Mesoscopic Thermodynamics", (Prague)

27. March 2013, *Strongly correlated Fermi gases*, EMMI workshop "From Ultracold Fermi Gases to Neutron-rich Many-Body Systems: Universal Aspects and Modern Approaches to Density Functional Theory" (Darmstadt, Germany);

28. June 2012, *Thermodynamics of ultracold gases*, DAMOP Meeting (Anaheim, USA);

29. November 2012 *Thermodynamics of Strongly interacting Bose gases*, International Workshop "Frontiers of Ultracold Quantum Gases" (Paris)

30. February 2012, *Thermodynamics of ultracold gases*, CIFAR Cold Atoms Meeting(Banff, Canada);

31. January 2012, *Thermodynamics of ultracold gases*, IPS-SFP Workshop Condensed-matter and Quantum Information Physics: Shedding New lights with Atomic Systems (Singapore);

32. November 2011, *Spin dynamics of ultracold Fermi gases*, Modeling Materials With Cold Gases Through Simulations (Zurich, Switzerland);

33. October 2011, *Thermodynamics of strongly interacting Fermi gases*, Advanced Workshop Advanced Working Group on Nonequilibrium Phenomena in low-dimensional Cold Gases (Egham, Great Britain);

34. July 2011, *Les gaz de fermions ultra-froids : une nouvelle famille de supraconducteurs à haute température critique*, Congrès général de la SFP (Bordeaux France);

35. June 2011, *Des atomes froids pour comprendre la matière condensée*, 6$^{\text{e}}$ journée théoriciens de la fédération Lumière-Matière (Orsay, France);

36. May 2011, *Thermodynamics of ultra-cold Fermi gases*, Fermions from Cold Atoms to Neutron Stars: Benchmarking the Many-Body Problem (Seattle, USA);

37. October 2010, *Thermodynamics of an ultra-cold Fermi gas*, Symposium Cold Atoms and Condensed Matter (Vedbaek, Denmark);

38. September 2010, *Thermodynamics of an ultra-cold Fermi gas*, Euroquam Conference (Ischgl, Austria);

39. August 2010, *Le problème à $N+1$ corps et le diagramme de phase d'un gas de fermions polarisé*, $12^{\text{ème}}$ Journées de la matière condensée (Troyes, France);

40. August 2010, *Thermodynamics of an ultra-cold Fermi gas*, Quantum Fluids and Solids (QFS) 2010, (Grenoble, France);

41. July 2010, *Thermodynamics of an ultra-cold Fermi gas*, International Conference on Atomic Physics (ICAP) 2010, (Cairns, Australia);

42. July 2010, *Thermodynamics of an ultra-cold Fermi gas*, International Conference on Frustrated Spin Systems, Cold Atoms and Nanomaterials, (Hanoi, Vietnam);

43. November 2009, *Weighing a particle immersed in a Fermi Sea*, Workshop on ab-initio modeling of cold gases, Zurich, Switzerland.

44. October 2009, *Ultra cold Fermi gases*, Session pléniè re du GDR Physique quantique mésoscopique, (Aussois, France);

45. May 2009, *Swimming in the Fermi Sea*, Conference on Research Frontiers in Ultra-Cold Atoms (Trieste, Italy);

46. March 2007: *Unitary Fermi gas*, APS March meeting, (Denver, USA);

47. July 2006: *Strongly interacting Fermi gases*, 15th international laser physics workshop, (Lausanne, Switzerland);

48. June 2006: Autour des condensats de Bose-Einstein, Journées à l'IHP entre mathématiciens et physiciens (Paris, France);

49. September 2005: *Experimental study of strongly interacting Fermi gases*, International workshop on correlated fermions (Palma de Mallorca, Spain);

50. July 2005: *Expansion of an ultra cold Fermi gas in the BEC-BCS crossover regime*, ESF workshop New Phenomena in Superfluidity and Superconductivity (Camerino, Italy);

51. February 2005: *Ultra cold ^{6}Li atoms close to a Feshbach resonance*, Obergurgl meeting 2005 (Obergurgl, Austria);

52. September 2004: *Fermi gas in the BEC-BCS crossover*, Meeting on interacting fermions and optical lattices (Zurich, Switzerland);

53. July 2004: *Ultra-cold fermions close to a Feshbach resonance*, 13th International laser physics workshop (Trieste, Italy);

54. July 2004: *Ultra-cold fermions close to a Feshbach resonance : Molecular BEC and p-wave resonances*, Quantum fluids and solids (QFS) 2004 (Trento, Italy);

55. March 2004: *Degenerate Fermi gas close to a Feshbach resonance*, Quantum limited atom optics (Hannover, Germany);

56. May 2003: *Vortex dynamics*, Workshop on Bose-Einstein condensation and optical lattices, (Minneapolis, USA);

57. June 2002: *Dynamics of a rotating Bose-Einstein condensate*, International Quantum Electronics Conference (IQEC) 2002 (Moscow, Russia);

58. July 2001: 10th International laser physics workshop (Moscow, Russia);

59. July 2000: *Nucleation of quantized vortices in a gaseous Bose-Einstein condensate*, Conference on atom optics and interferometry (Cargèse, France);

60. July 2000: *Nucleation of quantized vortices in a gaseous Bose-Einstein condensate*, International laser physics workshop (Bordeaux, France);

6.2 Lectures in International Schools

1. March 2023 *Attractive fermions fermions: the BEC-BCS crossover and the unitary Fermi gas*, ICTP-SAIFR school on light and cold atoms (Sao Paulo, Brazil).

2. October 2018 *Strongly correlated fermions: the BEC-BCS crossover and the unitary Fermi gas*, les Houches school on fermions (Les Houches, France).

3. June 2018, *Strongly correlated Fermi gagses*, Croucher summer courses on ultracold atom physics (Hong-Kong)

4. April 2017, *From micro to macro: Tan's contact parameter and thermodynamics*, EMMI Workshop From Few to Many, Exploring Quantum one atom at a time (Obergurgl, Austria)

5. July 2016, *Superfluidity of ultracold bosons and fermions*, 9th International Summer School of the SFB/TRR21 *Control of Quantum Correlations in Tailored Matter*, (Schloss Reisensburg, Gunzburg, Germany)

6. June 2015, *Strongly correlated quantum gases*, Polatom School on Cold Atoms and Polaritons (Bad Honnef, Germany)

7. March 2011, *Ultracold Fermi gases*, DPG school on Quantum Gases in Dilute Atomic Vapour (Bad Honnef, Germany)

8. July 2010, *Thermodynamics of an ultra-cold Fermi gas*, Summer School "Many-body Physics with ultracold Atoms", (Les Houches, France);

9. September 2009, *Ultra cold Fermi gases*, Electronic/Optical Coherence in Low Dimensional Semiconductors and Atomic Gases summer school, Institute of Theoretical and Applied Physics, (Turunc/Marmaris, Turkey);

10. July 2009, *Ultra cold Fermi gases*, Les Houches School of Physics in Singapore, Ultracold gases and Quantum Information (Singapore);

11. June 2006: *Polarized unitary Fermi gases*, CLXIV summer school Enrico Fermi on ultra-cold Fermi gases (Varenna, Italy);

6.3 Seminars

1. *Simulation quantique avec des atomes ultrafroids*, seminar of ENS Lyon Physics department, 1/02/2023 (Lyon, France)

2. *Ultracold fermions in quantum wires: when is 1D truly 1D*, CQT/Majulab seminar, 17/11/2022 (Sinagpore)

3. *The 2N+1 body problem: an impurity immersed in a spin 1/2 fermionic superfluid*, Yale AMO seminar, 11/10/2022 (Yale University, USA)

4. *Impurity physics with cold atoms: Fermi polaron, Bose polaron and beyond.*, Ryken, 10/11/2021 (Ryken, Tokyo - online)

5. *Exploring the quantum many-body problem using ultracold atoms*, UMass Boston, 21/10/2021 (Boston, USA - online)

6. *A polaron immersed in a superfluid*, Weizmann Institute, 14/01/2020 (Tel Aviv, Israel)

7. *The 2N+1 body problem: an impurity immersed in a spin 1/2 fermionic superfluid*, Bar Ilan, 12/1/2020 (Tel Aviv, Israel)

8. *The 2N+1-body problem: an impurity immersed in a spin 1/2 fermionic superfluid*, LENS Seminar, 27/09/2019 (Florence, Italy)

9. *The 2N+1 body problem: an impurity immersed in a spin 1/2 fermionic superfluid*, CQT seminar, NUS, 25/4/2019 (Singapore)

10. *Ultracold fermions*, NTU seminar, NTU 25/04/2019 (Singapore)

11. *The cobra wave*, Physics Club seminar, Yale University 19/02/2018 (New Haven, USA)

12. *Dual superfluidity in ultracold Bose-Fermi mixtures*, AMO Seminar, Stanford University 12/06/2017 (Stanford, USA)

13. *Waves, vortices and Superfluidity*, Bar Illan University Physics Colloquium, University of Bar Ilan 23/01/2017 (Tel Aviv, Israel)

14. *Waves, vortices and Superfluidity*, Astrophysics and Physics Colloquium/French Scholar series, University of British Columbia 21/04/2016 (Vancouver, Canada)

15. *From ultracold to ultrafast, two instances of analogue simulation using cold atoms*, AMO Technical Seminar, University of British Columbia 21/04/2016 (Vancouver, Canada)

16. *Thermodynamics and Superfluidity of Strongly Correlated Ultracold Atoms*, Colloquium of Hamburg University Graduate School on "Physics with new coherent radiation sources" 13/01/2015 (Hamburg)

17. *Thermodynamics and Superfluidity of Strongly Correlated Ultracold Atoms*, Colloquium of Hamburg University Graduate School on "Physics with new coherent radiation sources" 13/01/2015 (Hamburg)

18. *Ondes et tourbillons dans les fluides et les superfluides*, Séminaire général de l'UFR de Physique, 19/09/2014 (Université Paris Diderot)

19. *Thermodynamics of strongly correlated gases*, Séminaire du SPEC, 25/06/2014 (CEA, Saclay)

20. *Ondes et tourbillons dans les fluides et les superfluides*, Séminaire du PMMH, 11/04/2014 (ESPCI, Paris)

21. *Thermodynamics of strongly correlated gases*, Séminaire général du département de physique de l'ENS, 13/03/2014 (ENS, Paris)

22. *The quest for the Unitary Bose gas*, Weizmann Institute, 08/01/2014 (Tel Aviv, Israël)

23. *Thermodynamics of Ultracold Gases*, Bar Ilan University, 06/01/2014 (Tel Aviv, Israël)

24. *Two lectures on ultracold Fermi gases*, Bar Ilan University, 05-07/01/2014 (Tel Aviv, Israël)

25. *Thermodynamics of Ultracold Gases*, Hong-Hong University, 28/06/2013 (Hong-Kong)

26. *Four Lectures on Ultracold Atoms*, Hong-Kong University of Science and Technology, 24-27/06/2013 (Hong-Kong)

27. *Thermodynamics of Ultracold Gases*, SPMS Seminar, 16/05/2013 (Singapore)

28. *Thermodynamics of Strongly Interacting Bose Gases*, CQT Seminar, 14/05/2013 (Singapore)

29. *Thermodynamics of Strongly Interacting Bose Gases*, LENS Seminar, 30/11/2012 (Florence, Italy)

30. *Gaz de fermions ultra-froids fortement corrélés*, Journée "La physique aux basses températures à l'UPMC", 09/06/2011 (Paris);

31. *Thermodynamique des gaz de fermions ultra-froids*, Séminaire du Laboratoire Kastler Brossel, 02/05/2011 (Paris);

32. *Tourbillons quantiques dans les condensats de Bose-Einstein en rotation*, Séminaire du Laboratoire Jean Kuntzmann, 13/04/2011 (Grenoble);

33. *Vortices in ultracold gases*, Séminaire de théorie des cordes, CPHT, École Polytechnique, 08/12/2010;

34. *Thermodynamique des gaz de fermions en interactions fortes*, Séminaire du Laboratoire de Physique des Lasers, Université de Villetaneuse, 04/06/10;

35. *The $N+1$ body problem and the phase diagram of a spin imbalance Fermi gas*, AMO Seminar, (Cambridge, UK), 27/04/10;

36. *Thermodynamics of the unitary Fermi gas*, BEC-INFM Seminar (Trento, Italy), 20/11/09;

37. *Weighing an impurity immersed in a Fermi sea*, CQT Seminar (Singapore), 30/07/09;

38. *Swimming in the Fermi Sea*, Harvard-MIT CUA seminar (Cambridge, USA), 01/04/08;

39. *Baignade dans la mer de Fermi*, Séminaire IFRAF, École normale supérieure, 14/03/08;

40. *Superfluidité dans les gaz de Fermi ultra-froids*, Séminaire LASIM, Université Lyon 1, 13/12/2007;

41. *Fermionic Superfluidity with Ultra-cold atoms*, University of British Columbia (Vancouver, Canada), 08/03/07;

42. *Résistance de vague d'un objet immergé*, séminaire IRPHE (Marseille), 28/02/2003;

43. *Résistance de vague d'un objet immergé*, séminaire PCT (ESPCI, Paris), 10/12/2002;

44. *Dynamics of a stirred Bose-Einstein condensate*, BEC theory group seminar (Trento), 09/02/2002;

45. *Un condensat de Bose-Einstein en rotation*, séminaire CPMOH (Bordeaux), 19/06/2001;

7 Outreach

7.1 Articles

1. *Tout est dans tout et réciproquement.* Article pour le numéro 8 de la Normale Physics Review (03/2021).

2. *Bose Polarons that Strongly Interact* (Viewpoint on PRL **117**, 055302 (2016) and PRL **117**, 055301 (2016)), F. Chevy Physics **9**, 86 (2016).

3. *Solitons with a Twist* (Viewpoint on PRL **113**, 065301 (2014) and PRL **113**, 065302 (2014)), F. Chevy, Physics **7**, 82 (2014)

4. *Atomes froids et physique du solide*, F. Chevy, X. Leyronas and L. Sanchez-Palencia, Revue de l'Électricité et de l'Électronique **4**, 71 (2012).

5. *Les atomes froids et la supraconductivité*, F. Chevy and Y. Castin, Reflets de la Physique **29**, 4 (2012).

6. *Quantum Mechanics Returns to Ancient Greece*, F. Chevy, Atomium Culture Project, published in El Pais, der Standard and the Irish Times;

7. *Swimming in the Fermi Sea* (Viewpoint on Phys. Rev. Lett. 102, 230402 (2009)), F. Chevy, Physics **2**, 48 (2009)

8. *Rotating Bose-Einstein condensates*: F. Chevy and J. Dalibard, Europhysics news **37**, 12 (2006);

9. *La preuve par les atomes froids*: F. Chevy, La Recherche, 1393, janvier 2005;

10. *Les gaz de fermions ultra-froids*: F. Chevy and C. Salomon, Images de la physique (2005);

11. *Superfluidity in Fermi gases*: F. Chevy and C. Salomon, Physics World, March 2005;

12. *Les condensats de Bose-Einstein*: F. Chevy and J. Dalibard, Bulletin de la Société Française de Physique, n142, décembre 2003-janvier 2004;

7.2 Oral presentations

1. *Mesurer*, Fête de la science, October 2022 (ENS, Paris)

2. *Mesurer le temps et l'espace*, Stage "Science ouverte" sur la mseure, February 2022 (ENS, Paris)

3. *Les mystères des atomes froids*, Ecole polytechnique Science Camp, July 2020 (online).

4. *La quête du Zéro absolu*, Fête de la Science, October 2019 (ENS, Paris)

5. *La mécanique du sport*, Stage "Science ouverte" sur la physique du sport, April 2019 (ENS, Paris)

6. *Vagues, navires et nageurs: quelques problèmes d'hydrodynamique à la surface de l'eau*, journée TIPE de l'ENS, March 2019 (ENS, Paris)

7. *Un sabre laser?*, Fête de la science, October 2018 (ENS, Paris)

8. *Un sabre laser?*, Stage "Science ouverte": la lumière, February 2018 (ENS, Paris)

9. *Ondes, vagues et tourbillons dans les fluides et les superfluides*, December 2016 (Lycée Corneille, Rouen);

10. *Homo bulla est: Physique des bulles et des mousses*, Stage "Science Ouvertes" sur la physique du quotidien, April 2016 (ENS, Paris);

11. *Ondes, vagues et tourbillons dans les fluides et les superfluides*, June 2014 (Lycé Sainte Geneviève, Versailles);

12. *La température*, Stage "Science ouverte": la température dans tous ses états, January 2014 (ENS, Paris);

13. *Au fait, c'est quoi un boson ?*, Stage "Science ouverte": du photon au boson de Higgs, la quête des particules élémentaires, January 2012 (ENS, Paris);

14. *Indiscernabilité quantique*, journées de formation des professeurs de CPGE, May and November 2012 (ENS, Paris);

15. *Des atomes refroidis par laser pour comprendre la matière quantique*, exposé aux classes préparatoires du lycée Henri IV, 05/01/2012 (Paris);

16. *Des atomes froids pour décrire la matière condensée*, Petit séminaire de vulgarisation, 16/06/2011 (Orsay);

17. *Des gaz d'atomes ultra-froids pour comprendre la physique du solide*, Science Académie, École Normale Supérieure, 15/02/2011;

18. *Ondes, spirales et tourbillons dans le monde quantique*, Journée d'étude tourbillons, spirales et labyrinthes, (Université Paris-Diderot) 12/05/10;

19. *Des atomes froids pour décrire la matière condensée*, séminaire de la FIP, École Normale Supérieure, 18/11/2008;

20. *Lumière, ondes et particules*, Science académie, 27/02/07;

21. *Les gaz d'atomes ultra-froids et les nouveaux états de la matière*, Université dans la cité, 08/06/2004;

7.3 Media

1. Participation to TV science show E=M6 (aired on May. 7th 2023);

2. *À la conquète du froid*, Youtube channel audimath

3. Participation to TV science show E=M6 (aired on Dec. 10th 2017);

4. Participation to the radio show *La méthode scientifique* (Condensat de Bose Einstein: le gaz parfait?, aired on Nov. 28th 2017);