

BASIC INFORMATION

Mailing address

ICFO –The Institute of Photonic Sciences
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Research ID: [I-8152-2012](https://orcid.org/0009-0001-8152-2012)

Citizenship: Spain and France

CV SUMMARY

I am an experimental physicist with an international research career at the interface between atomic and condensed matter physics. My research activities are centered on the experimental simulation of quantum many-body physics with ultracold atoms, including superfluid Fermi gases, the strongly correlated phases of the Fermi-Hubbard model, quantum magnetism, artificial graphene, quantum liquid droplets in bosonic mixtures, artificial gauge fields, and gauge theories. After a PhD thesis at Ecole Normale Supérieure in Paris, a postdoctoral stay at ETH Zurich, and a CNRS research scientist position at Institut d'Optique in Bordeaux, I joined ICFO as Group Leader in 2013 and became ICREA professor in 2022. At ICFO, I have established the only experimental research group working on quantum simulation with ultracold quantum gases in Spain, producing in 2015 the first Spanish Bose-Einstein condensate. Since then, I have developed three distinct research lines. First, I have pioneered the field of continuum quantum mixtures with competing interactions, a research line that is well recognized internationally and has led to several high-impact publications (*Science*, *Nature*, *Phys. Rev. Lett.*), invited talks in the major conferences (BEC, DAMOP, ICOLS, ICAP, APS March Meeting), and is currently supported by an ERC Consolidator Grant. Second, I have constructed an experimental apparatus for the investigation of strontium optical lattice systems with single-site and single-atom resolution, which will focus on the quantum simulation of the Bose and Fermi-Hubbard models, and is part of the European Quantum Technologies Flagship program in quantum simulation. Finally, I have very recently started the development of a new research line that aims at investigating gauge theories with programmable arrays of Rydberg atoms. My work is carried out in collaboration with leading theory groups in Catalonia (at ICFO, UPC, and UAB) and worldwide (at Paris, Harvard, Munich, and Trento). My experimental group currently consists of 4 postdocs, 3 PhD students, 1 project engineer, and 6 Master students. In parallel to my experimental research activities, I co-supervise several theory researchers (2 postdocs, 2 PhD students), I teach in Master programs and in international graduate schools, and regularly give talks and labtours for general audiences.

CURRENT POSITION

ICREA Professor

ICFO – The Institute of Photonic Sciences, Castelldefels (Barcelona), Spain
Head of the Ultracold Quantum Gases group

01/2022 - present

PREVIOUS POSITIONS

Group Leader

ICFO – The Institute of Photonic Sciences, Castelldefels (Barcelona), Spain
Head of the Ultracold Quantum Gases group

06/2013 - 12/2021

CNRS scientist (CR2), Laboratoire Photonique, Numérique, Nanosciences

Institut d'Optique d'Aquitaine, Talence (Bordeaux), France (currently on leave)
Cold Atoms group – Group Leader: Philippe Bouyer

01/2012 - 05/2013

Academic guest, Institute for Quantum Electronics

01/2012 - 09/2012

ETH Zurich, Switzerland
 Quantum Optics group – Group Leader: Tilman Esslinger
Postdoctoral researcher, Institute for Quantum Electronics 07/2008 - 12/2011
 ETH Zurich, Switzerland
 Quantum Optics group – Group Leader: Tilman Esslinger

EDUCATION

Ph.D. in Physics, Université Pierre et Marie Curie (Paris 6), France 10/2004 - 06/2008
 Laboratoire Kastler Brossel, Ecole Normale Supérieure Paris
 Advisor: Christophe Salomon
 Thesis: *Superfluidity in an Ultracold Fermi Gas*

Master in Quantum Physics, Ecole Normale Supérieure Paris, France 09/2003 - 06/2004
Exchange student, Université Denis Diderot (Paris 7), France 09/2002 - 07/2003
Bachelor studies in Physics, Universidad Complutense de Madrid, Spain 09/1999 - 07/2002

AWARDS

ERC Consolidator Grant, European Research Council 2020
Outstanding Reviewer, New Journal of Physics 2018
Ramón y Cajal Fellowship, Spanish Ministry of Research 2016
Young Physicist Award (experimental physics), Spanish Royal Physics Society 2015
L'Oréal - UNESCO Spanish prize For Women in Science 2014
NEST Fellowship, Fundació Privada CELLEX Barcelona 2013
EPL poster prize, International Conference on Atomic Physics (ICAP) 2012
PhD Fellowship, French Ministry of Research 2004 - 2007
Spanish Extraordinary Prize for outstanding high school students 1999
 (Premio Extraordinario de Bachillerato)

PUBLICATION SUMMARY

- As of October 2023, 29 refereed publications, including 2 Nature, 2 Science, 9 Phys. Rev. Lett., 5 publications in conference proceedings or chapters in books, 1 invited publication, 1 outreach article
- H-index=21, 3933 citations (136 citations/article), 10 articles cited more than 100 times (Web of Science, October 2023)
 For continuously updated information, see [Research ID: I-8152-2012](https://orcid.org/0009-0001-8152-2012)
- 2 journal covers (Nature, Eur. Phys. J. Special Topics)
 6 publications selected for feature articles or as Editors' Suggestion (Nature *News and Views*, Science *Perspective*, Nature Physics *News and Views*, Nature Physics *Research Highlight*, Physics Today, Physical Review Research *Editors' Suggestion*)
 1 invited feature article (Science *Perspective*)

SELECTED PUBLICATIONS

1. A. Frölian, C. S. Chisholm, E. Neri, C. R. Cabrera, R. Ramos, A. Celi, and L. Tarruell. *Realizing a 1D topological gauge theory in an optically dressed BEC*. Nature **608**, 293 (2022).
2. J. Sanz, A. Frölian, C. S. Chisholm, C. R. Cabrera, and L. Tarruell. *Interaction control and bright solitons in coherently-coupled Bose-Einstein condensates*. Phys. Rev. Lett. **128**, 013201 (2022).

3. C. R. Cabrera, L. Tanzi, J. Sanz, B. Naylor, P. Thomas, P. Cheiney, and L. Tarruell. *Quantum liquid droplets in a mixture of Bose-Einstein condensates*. *Science* **359**, 301 (2018). **Selected for a Science Perspective, a Nature Physics News and Views, and a highlight and an article in Physics Today.**
4. P. Cheiney, C. R. Cabrera, J. Sanz, B. Naylor, L. Tanzi, and L. Tarruell. *Bright Soliton to Quantum Droplet Transition in a Mixture of Bose-Einstein Condensates*. *Phys. Rev. Lett.* **120**, 135301 (2018). **Selected for a Nature Physics News and Views and an article in Physics Today.**
5. D. Greif, T. Uehlinger, G. Jotzu, L. Tarruell, and T. Esslinger. *Short-range quantum magnetism of ultracold fermions in an optical lattice*. *Science* **340**, 1307 (2013). **Selected for a Science Perspective.**
6. L. Tarruell, D. Greif, T. Uehlinger, G. Jotzu, and T. Esslinger. *Creating, moving and merging Dirac points with a Fermi gas in a tunable honeycomb lattice*. *Nature* **483**, 302 (2012). **Selected for a Nature News and Views and as Nature cover.**
7. R. Jördens, L. Tarruell, D. Greif, T. Uehlinger, N. Strohmaier, H. Moritz, T. Esslinger, L. De Leo, C. Kollath, A. Georges, V. Scarola, L. Pollet, E. Burovski, E. Kozik, and M. Troyer. *Quantitative Determination of Temperature in the Approach to Magnetic Order of Ultracold Fermions in an Optical Lattice*. *Phys. Rev. Lett.* **104**, 180401 (2010).
8. N. Strohmaier, D. Greif, R. Jördens, L. Tarruell, H. Moritz, T. Esslinger, R. Sensarma, D. Pekker, E. Altman, and E. Demler. *Observation of elastic doublon decay in the Fermi-Hubbard model*. *Phys. Rev. Lett.* **104**, 080401 (2010).
9. S. Nascimbène, N. Navon, K. Jiang, L. Tarruell, M. Teichmann, J. McKeever, F. Chevy, and C. Salomon. *Collective Oscillations of an Imbalanced Fermi Gas: Axial Compression Modes and Polaron Effective Mass*. *Phys. Rev. Lett.* **103**, 170402 (2009).
10. T. Bourdel, L. Khaykovich, J. Cubizolles, J. Zhang, F. Chevy, M. Teichmann, L. Tarruell, S. J. J. M. F. Kokkelmans, and C. Salomon. *Experimental Study of the BEC-BCS Crossover Region in Lithium 6*. *Phys. Rev. Lett.* **93**, 050401 (2004).

SELECTED INVITED TALKS

BEC Sant Feliu de Guixols (2023, 2017), APS March Meeting (2023), Gordon Research Conference (2023), ICAP (2022), DAMOP (2022, 2018), MIT-Harvard CUA seminar (2022, 2018), Collège de France seminar (2022), PTB/University of Hannover colloquium (2022), KITP (2021, 2016, 2012), BEC Center Trento (2019), ICOLS (2019), LKB seminar (2019), CLEO (2019, 2013), EGAS (2018), Heidelberg CQD colloquium (2018), Quantum Optics IX (2017), MPQ colloquium (2017), MPI PKS (2016, 2012), ICTP (2012), Aspen (2012, 2009).

COMPETITIVE FUNDING

European funding

1. Quantum Technologies Flagship <i>PASQUANS 2.1</i> (2023 – 2027)	1.050 k€
2. QuantERA <i>DYNAMITE</i> (2022 – 2025)	87 k€
3. ERC Consolidator Grant <i>SuperComp</i> (2021– 2026)	2.000 k€
4. EC Horizon 2020 FET-Open <i>DAALI</i> (2020 – 2024)	400 k€
5. EC FP7 FET-Proactive <i>QUIC</i> (2015 – 2019)	177 k€
6. EC FP7 Marie Curie Career Integration Grant <i>MAGQuPT</i> (2014 – 2018)	100 k€

Spanish national funding

7. NextGenerationEU <i>QuantumSpain</i> (2023 – 2025)	76 k€
8. NextGenerationEU <i>Quantum Communications</i> (2022 – 2025)	550 k€
9. Plan Nacional de I+D+i 2020 <i>LIGAS</i> (2021 – 2024)	254 k€
10. Plan Nacional de I+D+i 2017 <i>QuDROP</i> (2018 – 2021)	151 k€

11. Plan Nacional de I+D+i 2014 <i>StrongQSIM</i> (2015 – 2017)	97 k€
12. Equipamientos científico-técnicos 2019 (2019 – 2021)	190 k€
13. Equipamientos científico-técnicos 2019 (2019 – 2020)	167 k€
14. Equipamientos científico-técnicos 2018 (2018-2020)	107 k€
Foreign national funding	
15. US Army <i>BEC2023 conference</i> (2023)	18 k€
16. German DFG Research Unit <i>FOR2414</i> (2016 – 2022)	264 k€
Catalan funding	
17. RIS3CAT <i>QuantumCAT</i> (2018 - 2021)	371 k€
18. AGAUR SGR consolidated group <i>QENOP</i> (2022 – 2024)	60 k€
19. AGAUR SGR emergent group <i>QGE</i> (2017 – 2021)	10 k€
Private foundations	
20. Fundación Ramón Areces <i>CODEC</i> (2019 – 2021)	130 k€
21. Fundación BBVA <i>GAS3D</i> (2015)	40 k€
22. L'Oréal-UNESCO Prize For Women in Science <i>MAAF</i> (2015)	15 k€
External fellowships for group members	
1. Marie Curie individual fellowship, Ramón Ramos (2021 – 2023)	157 k€
2. Marie Curie individual fellowship, Elettra Neri (2021 – 2022)	55 k€
3. Marie Curie individual fellowship, Pierrick Cheiney (2015 – 2017)	158 k€
4. Ramón y Cajal fellowship, Leticia Tarruell (2017 – 2021)	209 k€
5. Juan de la Cierva Formación fellowship, Antonio Rubio-Abadal (2022 – 2024)	59 k€
6. FPI PhD fellowship, Claudio Iacovelli (2016 – 2019)	99 k€
7. FPI PhD fellowship, Sandra Buob (2016 – 2019)	79 k€
8. FPI PhD fellowship, Julio Sanz Sánchez (2016 – 2019)	93 k€
9. Mexico CONACYT PhD fellowship, Cesar R. Cabrera Córdova (2014 – 2018)	42 k€
10. Beatriu de Pinós postdoctoral fellowship, Vasiliy Makhalov (2021 – 2024)	144 k€
11. LaCaixa INPhINIT PhD fellowship, Anika Frölian (2018 – 2021)	115 k€

GROUP STRUCTURE

- Three experimental laboratories (potassium mixtures, strontium lattice gases, strontium Rydberg atom arrays)
 - Current experimental group size: 4 postdocs, 3 PhD students, 1 project engineer, 6 Master students
 - Current co-supervision of theoretical researchers: 2 postdocs, 2 PhD students
 - Supervision at ICFO of 11 experimental postdoctoral researchers (4 ongoing) and 2 visiting theory postdoctoral researchers
- Thesis advisor for 9 PhD students (4 have graduated, 1 received the **ICFO PhD thesis prize**)
- Thesis advisor for 14 Master students (5 ongoing)
- Supervision of 2 Bachelor theses, 7 exchange students (Master level, 1 ongoing, 1 received the **Prix du Stage from Ecole Polytechnique**), and 13 internship students (bachelor and Master level)

TEACHING AND OUTREACH ACTIVITIES

Graduate summer schools: Les Houches (Quantum information 2022, Statistical Physics 2015, Cold atoms 2015, Computational Physics 2014), ICFO-UNAM-UniAndes (2021), University of Frankfurt (2020), University of Strathclyde (2015), Benasque Physics Center (2014).

Master and postgraduate courses: University of Barcelona Master in Quantum Science and Technology (since 2023), UPC Master in Photonics (since 2017), UPC Postgraduate in Quantum Technologies (since 2021), ETH Zurich Master in Physics (2010-2011).
Coordination team for the Master in Quantum Science and Technology (University of Barcelona).

Undergraduate courses: ETH Zurich Advanced Physics Laboratory (2008 – 2012) - *Prize of the ETH physics department for the Advanced Physics Laboratory 2012*. Exercise classes at ETH Zurich (2009-2010), Ecole Normale Supérieure Paris (2006-2008), Université Pierre et Marie Curie (Paris 6) (2004-2006).

Outreach

Speaker in outreach events: Quantum Technologies Flagship *QuantumBits* (2022), RSEF *Universo GEFES* (2022), *Fotónica en 5 minutos* (2021), Societat Catalana de Física *Física Oberta* (2020), Barcelona *Pint of Science* (2017)

Mentoring of summer research projects: Catalunya Caixa – ICFO Summer Fellows program for undergraduate students (2023, 2022, 2021, 2018, 2017, 2016, 2014)

Quantum mechanics demonstration experiments: development and demonstration of double slit experiments with single photons, ETH Zurich (2010)

Speaker in career sessions: CARLA Camp – careers in photonics (2022, 2021), EGAS career talk (2021)

PROFESSIONAL SERVICE

- **Local organizing committee** since 2021
International Conference on Bose-Einstein Condensation
Sant Feliu de Guíxols, Spain
- **Co-organizer** 2020 - 2022
European AMO online colloquium series [Quantum Science Seminar](#),
to palliate the lack of conferences during the COVID-19 pandemic
- **Co-organizer** 2019
Workshop *Dynamics and interactions in quantum gases*, Menorca, Spain
- **Local organizing committee** 2018
International Conference on Atomic Physics (ICAP), Barcelona, Spain
- **Program committee** 2015
QUTE-Europe Summer School, Chalmers, Sweden
- **Co-organizer** 2011
Workshop *Modelling materials with cold gases through simulations*, ETH Zurich, Switzerland
- **Editorial board** of Physical Review X Quantum since 2023
- **Co-editor** for Europhysics Letters 2018 - 2022
- **Referee** for Science, Nature, Nature Physics, Physical Review X, Physical Review Letters, Physical Review A, Physical Review B, New Journal of Physics (IoP Outstanding Reviewer 2018), Reports on Progress in Physics, and others.
- **Referee** for ERC (AdG, CoG, StG), Spanish AEI and Fundación BBVA, French ANR, DIM (Nano-K, Sirteq), German DFG, Italian "Quantum Science and Technology in Trento", New Zealand Marsden Foundation, British Leverhulme Trust, Israel Science Foundation, etc.

- **PhD thesis evaluations** for University of Cambridge, ETH Zurich, University of Innsbruck, Institut d'Optique, Ecole Normale Supérieure, Sorbonne Université, Université Paris Sciences et Lettres, Université Paul Sabatier-Toulouse, Université de Nice, Niels Bohr Institute, University of Aarhus, University of Florence, University of Trento, Universidad Complutense de Madrid, ICFO.
- **Habilitation thesis evaluations** for Technical University of Vienna, CNRS.

COMPLETE LIST OF PUBLICATIONS

Journal articles

1. L. Barbiero, J. Cabedo, M. Lewenstein, L. Tarruell, and A. Celi
Frustrated magnets without geometrical frustration in bosonic flux ladders
Phys. Rev. Research **5**, L042008 (2023)
2. J. Höschele, S. Buob, A. Rubio-Abadal, V. Makhalov, and L. Tarruell
Atom-number enhancement by shielding atoms from losses in strontium magneto-optical traps
Phys. Rev. Applied **19**, 064011 (2023)
3. C. S. Chisholm, A. Frölian, E. Neri, R. Ramos, L. Tarruell, and A. Celi
Encoding a one-dimensional topological gauge theory in a Raman-coupled Bose-Einstein condensate
Phys. Rev. Research **4**, 043088 (2022) [Citations: 2]
Selected as Editors' suggestion
4. A. Frölian, C. S. Chisholm, E. Neri, C. R. Cabrera, R. Ramos, A. Celi, and L. Tarruell
Realizing a 1D topological gauge theory in an optically dressed BEC
Nature **608**, 293 (2022) [Citations: 10]
5. J. Sanz, A. Frölian, C. S. Chisholm, C. R. Cabrera, and L. Tarruell
Interaction control and bright solitons in coherently-coupled Bose-Einstein condensates
Phys. Rev. Lett. **128**, 013201 (2022) [Citations: 12]
6. T. Salamon, A. Celi, R. W. Chhajlany, I. Frérot, M. Lewenstein, L. Tarruell, and D. Rakshit
Simulating twistrionics without a twist
Phys. Rev. Lett. **125**, 030504 (2020) [Citations: 29]
7. M. Buser, C. Hubig, U. Schollwöck, L. Tarruell, and F. Heidrich-Meisner
Interacting bosonic flux ladders with a synthetic dimension: Ground-state phases and quantum quench dynamics
Phys. Rev. A **102**, 053314 (2020) [Citations: 9]
8. L. Tanzi, C. R. Cabrera, J. Sanz, P. Cheiney, M. Tomza, and L. Tarruell
Feshbach resonances in potassium Bose-Bose mixtures
Phys. Rev. A **98**, 062712 (2018) [Citations: 33]
9. L. Tarruell and L. Sanchez-Palencia
Quantum simulation of the Hubbard model with ultracold fermions in optical lattices
Comptes Rendus Physique **19**, 365 (2018) [Citations: 74]
10. Y. V. Kartashov, B. A. Malomed, L. Tarruell, and L. Torner
Three-dimensional droplets of swirling superfluids
Phys. Rev. A **98**, 013612 (2018) [Citations: 77]
11. P. Cheiney, C. R. Cabrera, J. Sanz, B. Naylor, L. Tanzi, and L. Tarruell
Bright Soliton to Quantum Droplet Transition in a Mixture of Bose-Einstein Condensates
Phys. Rev. Lett. **120**, 135301 (2018) [Citations: 241]
Selected for a Nature Physics News and Views and an article in Physics Today.
12. Y. Ashida, R. Schmidt, L. Tarruell, and E. Demler

- Many-body interferometry of magnetic polaron dynamics*
 Phys. Rev. B **97**, 060302(R) (2018) [Citations: 22]
 Selected for a *Research Highlight in Nature Physics*.
13. C. R. Cabrera, L. Tanzi, J. Sanz, B. Naylor, P. Thomas, P. Cheiney, and L. Tarruell
Quantum liquid droplets in a mixture of Bose-Einstein condensates
 Science **359**, 301-304 (2018) [Citations: 402]
 Selected for a *Science Perspective*, a *Nature Physics News and Views*, and a highlight and an article in *Physics Today*.
 14. S. Muga, A. Dauphin, P. Massignan, L. Tarruell, M. Lewenstein, C. Lobo, and A. Celi
Measuring Chern numbers in Hofstadter strips
 SciPost Phys. **3**, 012 (2017) [Citations: 17]
 15. T. Grass, R. W. Chhajlany, L. Tarruell, V. Pellegrini, and M. Lewenstein
Proximity effects in cold atom artificial graphene
 2D Mater. **4**, 015039 (2017) [Citations: 12]
 16. J. Rodríguez-Laguna, L. Tarruell, M. Lewenstein, and A. Celi
Synthetic Unruh effect in cold atoms
 Phys. Rev. A **95**, 013627 (2017) [Citations: 47]
 17. J. Imriska, M. Iazzi, L. Wang, E. Gull, D. Greif, T. Uehlinger, G. Jotzu, L. Tarruell, T. Esslinger, and M. Troyer
Thermodynamics and magnetic properties of the anisotropic 3D Hubbard model
 Phys. Rev. Lett. **112**, 115301 (2014) [Citations: 36]
 18. D. Greif, T. Uehlinger, G. Jotzu, L. Tarruell, and T. Esslinger
Short-range quantum magnetism of ultracold fermions in an optical lattice
 Science **340**, 1307 (2013) [Citations: 303]
 Selected for a *Science Perspective*.
 19. T. Uehlinger, D. Greif, G. Jotzu, L. Tarruell, T. Esslinger, L. Wang, and M. Troyer
Double transfer through Dirac points in a tunable honeycomb optical lattice
 Eur. Phys. J. Special Topics **217**, 121 (2013) [Citations: 36]
 Selected as cover of the issue.
 20. L. Tarruell, D. Greif, T. Uehlinger, G. Jotzu, and T. Esslinger
Creating, moving and merging Dirac points with a Fermi gas in a tunable honeycomb lattice
 Nature **483**, 302 (2012) [Citations: 741]
 Selected as cover of the issue, and for a *Nature News and Views*.
 21. D. Greif, L. Tarruell, T. Uehlinger, R. Jördens, and T. Esslinger
Probing nearest-neighbor correlations of ultracold fermions in an optical lattice
 Phys. Rev. Lett. **106**, 145302 (2011) [Citations: 78]
 22. R. Sensarma, D. Pekker, E. Altman, E. Demler, N. Strohmaier, D. Greif, R. Jördens, L. Tarruell, H. Moritz, and T. Esslinger
Lifetime of double occupancies in the Fermi-Hubbard model
 Phys. Rev. B **82**, 224302 (2010) [Citations: 90]
 23. R. Jördens, L. Tarruell, D. Greif, T. Uehlinger, N. Strohmaier, H. Moritz, T. Esslinger, L. De Leo, C. Kollath, A. Georges, V. Scarola, L. Pollet, E. Burovski, E. Kozik, and M. Troyer
Quantitative Determination of Temperature in the Approach to Magnetic Order of Ultracold Fermions in an Optical Lattice
 Phys. Rev. Lett. **104**, 180401 (2010) [Citations: 131]
 24. N. Strohmaier, D. Greif, R. Jördens, L. Tarruell, H. Moritz, T. Esslinger, R. Sensarma, D. Pekker, E. Altman, and E. Demler
Observation of elastic doublon decay in the Fermi-Hubbard model
 Phys. Rev. Lett. **104**, 080401 (2010) [Citations: 198]
 25. S. Nascimbène, N. Navon, K. Jiang, L. Tarruell, M. Teichmann, J. McKeever, F. Chevy, and C. Salomon

Collective Oscillations of an Imbalanced Fermi Gas: Axial Compression Modes and Polaron Effective Mass

Phys. Rev. Lett. **103**, 170402 (2009) [Citations: 245]

26. F. Werner, L. Tarruell, and Y. Castin
Number of closed-channel molecules in the BEC-BCS crossover
Eur. Phys. J. B **68**, 401 (2009) [Citations: 139]
27. 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
Resonant scattering properties close to a p-wave Feshbach resonance
Phys. Rev. A **71**, 062710 (2005) [Citations: 62]
28. 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, and C. Salomon
P-wave Feshbach resonances of ultra-cold ${}^6\text{Li}$
Phys. Rev. A **70**, 030702(R) (2004) [Citations: 206]
29. T. Bourdel, L. Khaykovich, J. Cubizolles, J. Zhang, F. Chevy, M. Teichmann, L. Tarruell, S. J. J. M. F. Kokkelmans, and C. Salomon
Experimental Study of the BEC-BCS Crossover Region in Lithium 6
Phys. Rev. Lett. **93**, 050401 (2004) [Citations: 677]

Preprints

30. J. Argüello-Luengo, U. Bhattacharya, A. Celi, R. W. Chhajlany, T. Grass, M. Płodzień, D. Rakshit, T. Salamon, P. Stornati, L. Tarruell, and M. Lewenstein
Synthetic dimensions for topological and quantum phases: Perspective
arXiv:2310.19549

Conference proceedings and chapters in books

31. L. Tarruell
Spectroscopic Tools for Experiments with Ultracold Fermions in Optical Lattices
Chapter 11 in Quantum Gas Experiments - Exploring Many-Body States,
Eds. P. Törmä and K. Sengstock, Imperial College Press, London (2014)
32. T. Uehlinger, D. Greif, G. Jotzu, L. Tarruell, and T. Esslinger
Bloch-Zener oscillations in a tunable optical honeycomb lattice
The Physics of Semiconductors: Proceedings of the 31st International Conference on the
Physics of Semiconductors (ICPS) 2012 **1566**, 534-535 (2013)
33. C. Guerlin, K. Baumann, F. Brennecke, D. Greif, R. Jördens, S. Leinss, N. Strohmaier, L. Tarruell,
T. Uehlinger, H. Moritz, and T. Esslinger
Synthetic Quantum Many-Body Systems
LASER SPECTROSCOPY: Proceedings of the XIX International Conference on Laser
Spectroscopy ICOLS 2009. World Scientific, pp. 212-221 (2010)
34. L. Tarruell, M. Teichmann, J. McKeever, T. Bourdel, J. Cubizolles, L. Khaykovich, J. Zhang, N.
Navon, F. Chevy, and C. Salomon
Expansion of an ultra-cold lithium gas in the BEC-BCS crossover
Proceedings of the International School on Physics Enrico Fermi 2006, Ultracold Fermi Gases
(eds. Inguscio, M., Ketterle, W. and Salomon, C.), pp. 845-855. IOS Press, Amsterdam (2007)
35. 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, and C. Salomon
Expansion of a lithium gas in the BEC-BCS crossover
ATOMIC PHYSICS **19**: XIX International Conference on Atomic Physics ICAP 2004. AIP
Conference Proceedings **770**, pp. 228-237 (2005)

Invited publications

36. A. Celi and L. Tarruell
Probing the edge with cold atoms (Perspective)
Science **349**, 1450 (2015) [Citations: 5]

Outreach

37. L. Tarruell
Los gases cuánticos de fermiones ultrafríos como sistemas modelo de física de la materia condensada
Revista Española de Física **31**, 35 (2017)

COMPLETE LIST OF INVITED TALKS

2023

1. Physics Colloquium, University of the Basque Country, Bilbao (Spain)
Simulating exotic superfluids with optically-dressed Bose-Einstein condensates, 04/10/2023
2. International conference Bose-Einstein condensation 2023, Sant Feliu de Guíxols (Spain)
Engineering exotic superfluids with spin-orbit coupled Bose-Einstein condensates, 13/09/2023
3. Long-range interactions workshop, San Sebastián (Spain)
Supersolid-stripe phase in a spin-orbit coupled Bose-Einstein condensate, 08/09/2023
4. Gordon Research Conference in Atomic Physics, Salve Regina University, Rhode Island (USA)
Engineering exotic superfluids in optically-dressed Bose-Einstein condensates, 15/06/2023
5. Seminar, Atominstitut, Technical University of Vienna (Austria)
Engineering exotic superfluids in optically-dressed Bose-Einstein condensates, 05/05/2023
6. ICFO-IMPRS workshop, Castelldefels (Spain)
Engineering exotic superfluids in optically-dressed Bose-Einstein condensates, 20/04/2023
7. 2023 MIAPbP Program “Quantum Computing Methods” for lattice gauge theories, Garching (Germany)
Engineering a topological field theory with an optically dressed Bose-Einstein condensate, 18/04/2023
8. APS March Meeting 2023, Las Vegas (USA)
Engineering a topological gauge theory in an optically coupled Bose-Einstein condensate, 08/03/2023
9. Seminar, University of Cambridge (United Kingdom)
Engineering a topological gauge theory in an optically dressed Bose-Einstein condensate, 28/02/2023

2022

10. 777. WE-Heraeus Seminar Ultracold Quantum Matter, Bad Honnef (Germany)
Engineering a topological gauge theory in an optically dressed Bose-Einstein condensate, 14/12/2022
11. Colloquium, University of Hannover and PTB Braunschweig
Engineering gauge theories with Bose-Einstein condensates, 17/11/2022
12. Workshop Quantum Methods for Lattice Gauge Theories, Mainz Institute for Theoretical Physics, Mainz (Germany)
Engineering a topological gauge theory in an optically dressed Bose-Einstein condensate, 08/11/2022

13. Solvay Workshop in Quantum Simulation, Brussels (Belgium)
Engineering a topological gauge theory in an optically dressed Bose-Einstein condensate, 30/08/2022
14. International Conference in Atomic Physics (ICAP) 2022, Toronto (Canada)
Engineering a topological gauge theory in an optically dressed Bose-Einstein condensate, 21/07/2022
15. DAMOP Conference 2022, Orlando (USA)
Realizing a topological gauge theory in an optically dressed Bose-Einstein condensate, 02/06/2022
16. OSCAR Conference, Bad Honnef (Germany)
Engineering a topological gauge theory in an optically dressed Bose-Einstein condensate, 15/06/2022
17. ETH Condensed Matter Seminar, Zurich (Switzerland)
Simulating a topological field theory in an optically dressed Bose-Einstein condensate, 20/05/2022
18. Seminar, Cours 2022 du Prof. Jean Dalibard, Collège de France, Paris (France)
Realizing a topological gauge theory in an optically dressed Bose-Einstein condensate, 15/04/2022
19. MIT-Harvard Center for Ultracold Atoms (CUA) Seminar, Cambridge (USA)
Realizing a topological gauge theory in an optically dressed Bose-Einstein condensate, 29/03/2022

2021

20. Seminar, Department of Physics, University of Vilnius (Lithuania), online
Realizing a topological gauge theory in an optically-coupled Bose-Einstein condensate, 01/12/2021
21. NNV AMO Meeting, Lunteren (The Netherlands), online
Realizing a topological gauge theory in an optically-coupled Bose-Einstein condensate, 12/10/2021
22. Interdisciplinary Workshop on Supersolidity, Trento (Italy)
Spin-orbit coupled BECs with tunable interactions: from stripe phases to topological gauge theories, 22/09/2021
23. Munich Center for Quantum Science and Technology conference 2021, Munich (Germany), online
Realizing a 1D topological gauge theory in an optically dressed BEC, 20/07/2021
24. KITP Santa Barbara program "Interacting Topological Matter", Santa Barbara (USA), online
Realizing a 1D topological gauge theory in an optically dressed BEC, 17/06/2021
25. Conference SuperFluctuations 2021 - Fluctuations and Highly Non-Linear Phenomena in Superfluids and Superconductors, University of Camerino (Italy) and University of Columbia (USA), online
Realizing a topological gauge theory in an optically-coupled Bose-Einstein condensate, 14/06/2021
26. Young Atom Opticians (YAO) conference, University of Aarhus (Denmark), online
Realizing a 1D topological gauge theory in an optically dressed BEC, 28/05/2021
27. Seminar, Department of Physics, University of Göttingen (Germany), online
Realizing a 1D topological gauge theory in an optically dressed BEC, 27/04/2021
28. Seminar, BEC Center, Trento (Italy), online
Realizing a 1D topological gauge theory in an optically dressed BEC
29. Clustering and Global Challenges Conference 2021, online
Realizing a chiral gauge theory in an optically dressed Bose-Einstein condensate, 07/04/2021
30. ICFO-IMPRS Joint Workshop, online
Realizing a chiral gauge theory in an optically dressed Bose-Einstein condensate, 25/03/2021
31. Workshop on Entanglement in Strongly Correlated Systems, Benasque (Spain), online
Realizing a chiral gauge theory in an optically dressed Bose-Einstein condensate, 18/02/2021

2020

32. Minisymposium, Collaborative research center SFB/TR 185, Universities of Bonn and Kaiserslautern (Germany)
Engineering interactions and density-dependent gauge fields in coherently-coupled Bose-Einstein condensates, 23/11/2020
33. Quantum Technology International Conference – QTech 2020, Barcelona (Spain)
Bose-Einstein condensates with chiral interactions, 02/11/2020
34. Seminar, Department of Atomic and Laser Physics, University of Oxford (UK)
Chiral interactions in optically coupled Bose-Einstein condensates, 12/10/2020
35. Virtual AMO Seminar - [VAMOS](#) (USA)
Chiral interactions in optically coupled Bose-Einstein condensates, 18/09/2020

2019

36. Seminar, Laboratoire de Physique Théorique et Modèles Statistiques (LPTMS), Orsay (France)
Solitons and droplets in two-component Bose-Einstein condensates, 17/12/2019
37. Quantum Mixtures Workshop (for the 70th birthday of S. Stringari), Trento (Italy)
Solitons and droplets in two-component Bose-Einstein condensates, 15/07/2019
38. International Conference on Laser Spectroscopy (ICOLS), Queenstown (New Zealand)
Solitons and droplets in two-component Bose-Einstein condensates, 08/07/2019
39. Workshop on Dynamical gauge fields and lattice gauge theories in quantum gases, ETH Zurich
Density-dependent gauge fields in Raman-coupled Bose-Einstein condensates, 28/06/2019
40. CLEO, Munich (Germany)
Solitons and droplets in two-component Bose-Einstein condensates, 25/06/2019
41. Seminar of Laboratoire Kastler Brossel, Collège de France, Paris (France)
Making Quantum Liquids from Quantum Gases, 19/06/2019
42. ICE (Información cuántica en España) meeting
Solitons, droplets and artificial gauge fields in two-component BECs, 30/05/2019
43. European Conference on Quantum Technologies, Grenoble (France)
Simulating quantum liquids with quantum gases, 18-22/02/2019

2018

44. Quo Vadis BEC: Research Frontiers in Ultracold Quantum Gases, Bad Honnef (Germany)
Solitons and droplets in two-component Bose-Einstein condensates, 17-21/12/2018
45. Symposium on Quantum Technologies, Fundación Ramón Areces, Madrid (Spain)
Solitons and droplets in two-component Bose-Einstein condensates, 21-22/11/2018
46. RSEF Foro de Física de Átomos Fríos, Bilbao (Spain)
Solitons and droplets in two-component Bose-Einstein condensates, 16-17/11/2018
47. IFIMAC Seminar, Universidad Autónoma de Madrid (Spain)
Making Quantum Liquids from Quantum Gases, 19/10/2018
48. EGAS (European Group on Atomic Systems) conference, Krakow (Poland)
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 11/07/2018
49. YAO (Young Atom Opticians) conference, Glasgow
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 25/06/2018
50. APS DAMOP, Fort Lauderdale (USA)
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 01/06/2018
51. QSIT (Quantum Science and Technology) Workshop, Monte Verità (Switzerland)
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 28/05/2018
52. Seminar, Service de Physique de l'Etat condensé, CEA Saclay (France)
Making Quantum Liquids from Quantum Gases, 02/05/2018
53. Quantum Gases and Quantum Coherence Conference, Bad Honnef (Germany)
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 17/04/2018

- 54. Seminar of Center for Ultracold Atoms, Harvard University, Boston (USA)
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 13/03/2018
- 55. Made@ICFO colloquium, ICFO, Castelldefels (Spain)
Making Quantum Liquids from Quantum Gases, 21/03/2018
- 56. Quantum Simulation and Computation Workshop, Bilbao (Spain)
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 13/02/2018
- 57. Theoretical Physics Seminar, LMU Munich (Germany)
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 26/01/2018
- 58. Colloquium, Center for Quantum Dynamics, University of Heidelberg (Germany)
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 24/01/2018

2017

- 59. MPQ Colloquium, Garching (Germany)
Making quantum liquids from quantum gases, 19/12/2017
- 60. Young researchers meeting 2017, Instituto Nicolás Cabrera, UAM, Miraflores de la Sierra (Spain)
Making quantum liquids out of quantum gases, 15/12/2017
- 61. Croucher conference on Frontiers in Cold Atom Physics, Hong Kong
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 06/12/2017
- 62. Workshop Designing out-of-equilibrium many-body quantum systems, Glasgow (UK)
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 27/10/2017
- 63. Quantum Optics IX conference, Gdansk (Poland)
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 20/09/2017
- 64. Conference Bose-Einstein condensation 2017, Sant Feliu de Guixols (Spain)
Quantum liquid droplets in a mixture of Bose-Einstein condensates, 02-08/09/2017
- 65. SFB Colloquium, University of Stuttgart (Germany)
From solitons to droplets in attractive Bose-Bose mixtures, 02/06/2017
- 66. Conference Quantum science approaches to strongly correlated systems : from ultracold atoms to high-energy and condensed matter physics, GGI, Florence (Italy)
From solitons to droplets in attractive Bose-Bose mixtures, 29/05-02/06/2017

2016

- 67. Conference Designer Quantum Systems Out of Equilibrium, KITP, Santa Barbara (USA)
Soliton-to-droplet crossover in attractive Bose-Bose mixtures, 14-17/11/2016

2015

- 68. Workshop Synthetic Quantum Magnetism, Max Planck Institute for the Physics of Complex Systems, Dresden (Germany)
Short-range quantum magnetism of ultracold fermions in optical lattices, 31/08-04/09/2015
- 69. Conference "Quantum Technologies VI", Warsaw (Poland)
Short-range quantum magnetism of ultracold fermions in optical lattices, 21-27/06/2015
- 70. Seminar, Departamento de Física de la Materia Condensada, Universidad de Zaragoza (Spain)
Simulando materiales artificiales con átomos ultra-fríos en redes ópticas, 08/05/2015
- 71. Seminar, Institute for Laser Physics, University of Hamburg (Germany)
Short-range quantum magnetism of ultracold fermions in optical lattices, 09/02/2015
- 72. FOM Physics meeting, Veldhoven (Netherlands)
Short-range quantum magnetism of ultracold fermions in optical lattices, 21-22/01/2015

2014

- 73. Workshop Dirac and Topological Matter, Université de Bordeaux (France)
Simulating graphene with ultracold fermions in optical lattices, 12-14/11/2014
- 74. Conference Cold atoms and beyond, AIAS Aarhus (Denmark)

Short-range quantum magnetism of ultracold fermions in an optical lattice, 25-27/06/2014

75. 6th Madrid meeting on ultracold atoms, Instituto de Física Teórica, UAM, Madrid (Spain)
Ultracold fermions in tunable-geometry optical lattices, 31/01/2014

2013

76. Seminar, Universitat Politècnica de Catalunya (Spain)
Engineering synthetic quantum materials with ultracold fermions in a tunable-geometry optical lattice, 11/11/2013
77. Seminar, Universidad Complutense de Madrid (Spain)
Engineering synthetic quantum materials with ultracold fermions in a tunable-geometry optical lattice, 26/09/2013
78. Seminar, Institute of Theoretical Physics, University of Goettingen (Germany)
Engineering artificial materials with ultracold fermions in a tunable-geometry optical lattice, 02/07/2013
79. CLEO Conference, QELS-Fundamental Science Symposium "Quantum Simulators", San José (USA)
Simulating graphene with ultracold fermions in a honeycomb optical lattice, 08-13/06/2013
80. Seminar, Goethe University, Frankfurt (Germany)
Engineering artificial materials with ultracold fermions in a tunable-geometry optical lattice
81. Symposium on Topological Quantum Information, Benasque (Spain)
Engineering Dirac points with ultracold fermions in a tunable honeycomb optical lattice

2012

82. Max Planck Institute for the Physics of Complex Systems, Dresden (Germany)
Engineering Dirac points with ultracold fermions in optical lattices
83. KITP program on Quantum Dynamics in Far from Equilibrium Thermally Isolated Systems, Santa Barbara (USA)
Engineering Dirac points with ultracold fermions in optical lattices
84. Session plénière, GDR Physique Mésoscopique, Aussois (France)
Engineering Dirac points with ultracold fermions in optical lattices
85. Workshop on Quantum Simulations with Ultracold Atoms, ICTP, Trieste (Italy)
Engineering Dirac points with ultracold fermions in optical lattices
86. Workshop on Theory of Quantum Gases and Quantum Coherence, ENS Lyon (France)
Engineering Dirac points with ultracold fermions in optical lattices
87. Laboratoire Photonique, Numérique et Nanosciences, Institut d'Optique, Bordeaux (France)
Engineering Dirac points with ultracold fermions in optical lattices
88. Seminar, ICTP, Trieste (Italy)
Engineering Dirac points with ultracold fermions in optical lattices
89. Winter conference on New directions in Ultracold Atoms, Aspen (USA)
Creating, moving and merging Dirac points with a Fermi gas in a tunable honeycomb lattice

2011

90. Journée de l'Institut de Physique Fondamentale, Bordeaux (France)
Observation et manipulation de points de Dirac dans un gaz de fermions ultra-froids
91. Atelier de Physique Théorique, Université de Genève (Switzerland)
Creating, moving and merging Dirac points with a Fermi gas in a tunable honeycomb lattice
92. Workshop on Ultracold atoms/molecules, National Tsing-Hua University, Hsinchu (Taiwan)
Studying the metal-Mott insulator transition with ultracold fermions in an optical lattice
93. Workshop on Ultrafast Dynamics in Strongly Correlated Systems, ETH Zurich (Switzerland)
Non-equilibrium dynamics of ultracold fermions in optical lattices
94. Seminar, Ultracold Atoms Group, University of Nottingham (UK)
Probing nearest-neighbor correlations of ultra-cold fermions in an optical lattice

95. Seminar, Institute of Atomic and Subatomic Physics, Vienna University of Technology (Austria)
Simulating strongly correlated materials with ultracold fermions in optical lattices
96. Seminar, ICFO-The Institute of Photonic Sciences, Castelldefels (Spain)
Simulating strongly correlated materials with ultracold fermions in optical lattices

2010

97. Workshop on Ultracold Quantum Gases Beyond Equilibrium, Natal (Brazil)
Equilibrium and out of equilibrium physics with ultracold fermions in optical lattices
98. Workshop on Time-dependent dynamics and non-equilibrium quantum systems, Budapest (Hungary)
Equilibrium and out of equilibrium physics with ultracold fermions in optical lattices
99. SFB Seminar, University of Kaiserslautern (Germany)
Equilibrium and out of equilibrium physics with ultra-cold fermions in optical lattices

2009

100. Workshop on Quantum Simulation with Cold Atoms and Molecules, Aspen (USA)
Exploring the Fermi-Hubbard model with atoms in optical lattices
101. Seminar, University of Stuttgart, Germany (2009)
Equilibrium and out of equilibrium physics with ultracold fermions in optical lattices
102. Seminar, Laboratoire Charles Fabry, Institut d'Optique, Palaiseau (France)
Fermions en interaction dans un réseau optique : isolant de Mott et physique hors équilibre

2008

103. Seminar, Laboratoire Agrégats-Collisions-Réactivité, Université Paul Sabatier, Toulouse (France)
Systèmes fortement corrélés avec des fermions ultra-froids : de la superfluidité à l'isolant de Mott fermionique

2007

104. Seminar, Ultracold Atoms and Quantum Gases Group, University of Innsbruck (Austria)
Superfluidity in an ultra-cold Fermi gas
105. Seminar, Ultracold Atoms Group, University of Mainz (Germany)
Superfluidity in an ultra-cold Fermi gas
106. Seminar, Quantum Optics Group, ETH Zurich (Switzerland)
Superfluidity in an ultra-cold Fermi gas
107. Seminar, Ultracold Atoms Group, University of Heidelberg (Germany)
Experimental study of fermionic lithium in the BEC-BCS crossover
108. Trimester on Quantum Gases, Institut Henri Poincaré, Paris (France)
p-wave Feshbach resonances of ultra-cold ${}^6\text{Li}$

2006

109. International School on Ultracold Fermi Gases, Varenna (Italy)
Expansion of ${}^6\text{Li}$ in the BEC-BCS crossover

COMPLETE LIST OF GROUP MEMBERS (at ICFO)

CURRENT GROUP MEMBERS

Postdocs	Start date
Vasiliy Makhalov, <i>Beatriu de Pinós Fellowship</i>	15.10.2019
Antonio Rubio Abadal, <i>Juan de la Cierva Formación Fellowship</i>	19.04.2021

Sarah Hirthe	16.01.2023
Rémy Vatré	18.09.2023

PhD students

Jonatan Hörschele, <i>ICFO Stepstone Fellowship</i>	07.01.2019
Sandra Buob, <i>Severo Ochoa Fellowship</i>	02.03.2020
Claudio Iacovelli, <i>FPI Fellowship (co-supervision with A. Celi, UAB)</i>	01.02.2022
Julia Bergmann (<i>co-supervision with A. Celi, UAB</i>)	01.09.2022
Ana Pérez Barrera	03.10.2022

Project engineer

Andreas Meyer	09.10.2023
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Master students (including exchange students)

Théo Dardier, <i>Ecole Normale Supérieure Paris-Saclay</i>	26.09.2023
Judith González Sorribes, <i>Master in Photonics</i>	26.09.2023
Lucía Verdegay Fernández, <i>Master in Quantum Science and Technology</i>	26.09.2023
Giacomo Guarda, <i>Master in Quantum Science and Technology</i>	03.10.2023
Irene Prieto Rodríguez, <i>Master in Quantum Science and Technology</i>	30.10.2023
José Luis Reyes Calderón, <i>Master in Quantum Science and Technology</i>	30.10.2023

Visiting postdocs

Josep Cabedo Bru, <i>UAB</i>	23.05.2022
Pierpaolo Fontana, <i>UAB</i>	16.01.2023

FORMER GROUP MEMBERS

Postdocs	Start date	End date
Craig S. Chisholm <i>Now physicist at OpenStar</i>	20.06.2023	27.10.2023
Ramón Ramos, <i>Marie Curie Fellowship</i> <i>Now Head of Quantum Simulation at IDEADED</i>	01.10.2019	23.06.2023
Elettra Neri, <i>Marie Curie Fellowship</i> <i>Now physicist at CareGlance Srl</i>	01.11.2019	31.12.2021
Cesar R. Cabrera Córdoba, <i>ICFO-MPQ CELLEX Fellow</i> <i>Continued as Marie Curie postdoctoral fellow at MPQ and LMU Munich (I. Bloch's group), now senior postdoc at University of Hamburg (H. Moritz's group)</i>	11.10.2018	30.06.2020
Bruno Naylor <i>Now professeur agrégé de physique</i>	03.04.2017	31.03.2018
Luca Tanzi <i>Now permanent CNR researcher at CNR-Pisa and LENS</i>	03.11.2014	31.08.2017
Pierrick Cheiney, <i>Marie Curie Fellowship</i> <i>Now Research engineer at exail</i>	04.11.2013	31.03.2017

PhD students

Craig S. Chisholm, <i>ICFO Stepstone Fellowship</i> <u>Thesis:</u> Raman dressed Bose-Einstein condensates with tunable interactions: Topological gauge theories and supersolids <u>Grade:</u> Excellent <i>cum laude</i> <i>Continued in the group as postdoc</i>	25.06.2018	19.06.2023
Anika Frölian, <i>LaCaixa INPhINIT Fellowship</i> <u>Thesis:</u> Simulating a topological gauge theory in a Raman-dressed Bose-Einstein condensate	08.01.2018	07.04.2022

<u>Grade:</u> Excellent <i>cum laude</i> Now associate at McKinsey & Company		
Julio Sanz Sánchez, <i>FPI Fellowship</i>	02.11.2015	10.02.2020
<u>Thesis:</u> Two-component Bose gases with competing interactions		
<u>Grade:</u> Excellent <i>cum laude</i> Now quantum systems engineer at Quside		
Cesar R. Cabrera Córdoba, <i>CONACYT Fellowship</i>	07.01.2014	10.10.2018
<u>Thesis:</u> Quantum liquid droplets in a mixture of Bose-Einstein condensates		
<u>Grade:</u> Excellent <i>cum laude</i> , ICFO PhD thesis prize Continued in the group as postdoc		

Master Students

Marc Miranda Riza (Master in Quantum Science and Technology)	01.03.2023	05.09.2023
<u>Thesis:</u> Engineering quantum spin liquid states with ultracold bosons in optical lattices		
<u>Grade:</u> 9.8/10. Co-supervision with A. Celi (UAB) Will continue in the group as FPU PhD student		
Carlos Gas Ferrer (Barcelona Master in Photonics)	20.02.2023	09.09.2023
<u>Thesis:</u> Characterization and transverse laser cooling of a strontium atomic source		
<u>Grade:</u> 10/10 Will continue in the group as PhD student		
Ana Pérez Barrera (Barcelona Master in Photonics)	01.10.2021	09.09.2022
<u>Thesis:</u> Beam shaping and aberration correction using a spatial light modulator in ultracold atom experiments		
<u>Grade:</u> Matrícula de Honor Continued in the group as PhD student		
Eric Gil Portal (Barcelona Master in Photonics)	10.02.2022	06.09.2022
<u>Thesis:</u> A Strontium Atomic Source for Ultracold Quantum Gas Experiments		
<u>Grade:</u> 9.8/10 Continued as high-school teacher		
Antonio Estarellas Perales (Barcelona Master in Photonics)	16.04.2021	09.09.2021
<u>Thesis:</u> A 461 nm laser system for an ultracold strontium quantum gas experiment		
<u>Grade:</u> 8.7/10 Now PhD student at Real Observatorio de la Armada		
David Jacobs (University of Hamburg)	08.10.2018	26.11.2019
<u>Thesis:</u> Design and construction of a new experimental apparatus for the laser cooling of strontium		
<u>Grade:</u> Matrícula de Honor Continued at Greenpeace Energy		
Philip Thomas (University of Hamburg)	03.10.2016	29.10.2017
<u>Thesis:</u> Optical dipole potentials for multicomponent Bose-Einstein condensates		
<u>Grade:</u> Matrícula de Honor Continued as PhD student at MPQ (G. Rempe's group)		
Julio Sanz Sánchez (Barcelona Master in Photonics)	25.10.2014	10.09.2015
<u>Thesis:</u> Development of a fluorescence imaging system for a quantum gas experiment		
<u>Grade:</u> Matrícula de Honor Continued in the group as PhD student		
Manel Bosch Aguilera (Barcelona Master in Photonics)	20.11.2013	12.09.2014
<u>Thesis:</u> An experimental setup for gray molasses sub-Doppler cooling of potassium gases		
<u>Grade:</u> Matrícula de Honor Continued as PhD student at Laboratoire Kastler Brossel (J. Dalibard's group) and postdoc at University of Basel (P. Treutlein's group)		

Internship Students (Master level)

David Ribes Marzá (Master in Quantum Science and Technology)	27.09.2023	31.01.2023
<u>Project:</u> Development of laser sources for the laser cooling and manipulation of potassium atoms		
Roland Finance (École Polytechnique, France)	24.03.2022	31.09.2022
<u>Project:</u> Repumping Schemes for an Ultracold Strontium Experiment		

Prix du Stage from Ecole Polytechnique

Continued as Master student at ICFP, Ecole Normale Supérieure Paris

Ana Pérez Barrera (UAB, Spain)	19.04.2021	30.09.2021
<u>Project:</u> A setup for modulation transfer spectroscopy of potassium on the 767 nm transition		
<i>Continued as Master student in the group</i>		
Roger Bahí (BIST Master of Multidisciplinary Research)	01.03.2021	31.05.2021
<u>Project:</u> Magnetic field control for a strontium quantum gas experiment		
Manon Ballu (Ecole Normale Supérieure Paris-Saclay, France)	09.04.2018	27.07.2018
<u>Project:</u> Development of a Raman laser system for coherent coupling of potassium BECs		
<i>Now PhD student at Université Paris Nord (H. Perrin's group)</i>		
Vincent Brunaud (École Polytechnique, France)	21.03.2016	30.08.2016
<u>Project:</u> Construction of a potassium magnetometer based on Faraday rotation		
<i>Continued as PhD student at Université Paul Sabatier – Toulouse (D. Guéry-Odelin's group)</i>		
Lisa Saemisch (University of Bonn, Germany)	01.09.2014	31.03.2015
<u>Project:</u> Development of a high numerical aperture imaging system for a quantum gas experiment		
<i>Continued as PhD student at ICFO (N. van Hulst's group)</i>		
Vincent Lienhard (Ecole Normale Supérieure de Cachan, France)	22.04.2014	31.07.2014
<u>Project:</u> Contributions to an ultracold atom experiment		
<i>Continued as PhD student at Institut d'Optique Palaiseau (A. Browaeys' group)</i>		

Bachelor Students

Daniel Allepuz Requena (UB, Barcelona)	01.03.2019	30.06.2019
<u>Thesis:</u> Holographic creation of arbitrary potentials for BECs with digital micromirror devices		
<u>Grade:</u> Matrícula de Honor		
<i>Continued as Master and PhD student at Technical University of Denmark</i>		
Jordi Sastre Pellicer (UPC-CFIS, Barcelona)	16.02.2015	27.10.2015
<u>Thesis:</u> Design and construction of optical superlattices for a quantum gas experiment		
<u>Grade:</u> Excellent (9.8)		
<i>Continued as PhD student at EMPA and ETH Zurich (A. Tiwari's group)</i>		

Summer Students

Guillermo Gordillo Núñez (Universidad de Granada)	17.07.2023	29.09.2023
<u>Project:</u> Implementation of a 405 nm ECDL-based laser system		
<i>Continued as PhD student in Mathematics at University of Porto</i>		
Luis Castillo González (UAB, Barcelona)	26.06.2023	29.09.2023
<u>Project:</u> Electromagnetically induced transparency in rubidium atoms		
<i>Continued as Bachelor student in Physics and Mathematics at UAB</i>		
Aditya Prakash (ISER Bhubaneswar, India)	17.05.2023	31.07.2023
<u>Project:</u> Generating light potentials for ultracold atoms using a Digital Micromirror Device and a broad spectrum light source		
<i>Continued as Master student in Physics at ISER Bhubaneswar</i>		
Carla Caro Villanova (UB, Barcelona)	04.07.2022	
<u>Project:</u> Construction and lock of a 767 nm Distributed Feedback Laser using a Red Pitaya		
<i>Continued as Bachelor student in Physics at UB and in Philosophy at UNED</i>		
Sofie Castro Holbæk (University of Copenhagen, Denmark)	27.09.2023	
<u>Project:</u> Magnetic levitation and numerical calculation of the lifetime of a Raman-coupled potassium BEC		
<i>Continued as Master student in Physics at Niels Bohr Institute and PhD student at University of Zurich</i>		
Max Zayas Orihuela (UPV, Valencia)	01.07.2021	31.08.2021
<u>Project:</u> A laser system for cooling ⁴⁰ K fermionic atoms		
<i>Continued as Bachelor student in Industrial Engineering at UPV and in Physics at UV</i>		
Daniel Allepuz Requena (UB, Barcelona)	09.07.2018	31.08.2018

Project: Characterization of a *Red Pitaya* board applied to atomic physics experiments

Continued in the group as Bachelor student

Teo Gil Moreno de Mora Sardà (UAB, Barcelona) 02.07.2018 26.09.2018

Project: Measurement and stabilization of ambient magnetic fields for a quantum gas experiment

Continued as Bachelor student in Physics and Mathematics at UAB

Alberto Muñoz de las Heras (UAM, Madrid) 20.06.2017 22.09.2017

Project: Dynamical potentials and aberration correction with a Digital Micromirror Device

Continued as PhD student at the BEC Center, Trento (with I. Carusotto), now ComFuturo fellow at IFF-CSIC

Iñigo Urtiaga Erneta (UPC-CFIS, Barcelona) 27.06.2016 30.09.2016

Project: Generating Arbitrary Potentials with a Digital Micromirror Device

Continued as Master student in Mathematics at University of Bonn and PhD student in Mathematics at UPC

Jordi Sastre Pellicer (UPC-CFIS, Barcelona) 01.07.2014 30.09.2014

Project: Development of RF and MW sources for evaporative cooling of a potassium gas

Continued in the group as Bachelor student