

Curriculum Vitae – January 2020

Christophe SALOMON

Research Director at Laboratoire Kastler Brossel
Ecole Normale Supérieure, Paris, France.

Academic Qualifications

- 1973-76 Engineering school: Ecole Centrale des Arts et Manufactures de Paris (France).
- 1979 3rd Cycle Thesis: high resolution saturation spectroscopy with waveguide CO₂ lasers.
- 1984 PhD, Paris 13 University: Ramsey fringes and high resolution spectroscopy in the infrared.

Previous Academic Positions

- 1980 CR2, Research Associate at CNRS, France. LPL, Paris 13 University, Villetanneuse.
- 1984 Post-doctoral stay: JILA, University of Colorado, group of J. Hall.
- 1985 CR1, Research Associate, first class, at CNRS. Laboratoire Kastler Brossel, Ecole Normale Supérieure, Paris.
- 1990 Research Director 2nd class at CNRS.
- 2000 Research Director 1st class at CNRS. Head of laser cooling group with J. Dalibard.

Present Academic Position

- 2013- present, Research Director (exceptional class) at CNRS. Head of ultracold Fermi gas group at ENS since 2008.
- 2017- present, Director of the les Houches Physics School

Research Interests

Laser cooling and trapping of atoms

Laser cooled atomic clocks and fundamental tests

Quantum gases

Matter-wave solitons, Bloch oscillations of atoms

Superfluidity in strongly correlated Fermi gases

Thermodynamics of quantum gases and equation of state of strongly correlated Fermi gases

Unitary Bose gases

Bose-Fermi superfluids and Fermi-Fermi mixtures

Prizes, Honors

- 2017 Election at the French Academy of Sciences
- 2017 ERC Advanced Research Grant laureate of the European Union (2017-2021)
- 2014 Fellow of the American Physical Society. Galileo Ferraris memorial lecture award INRIM (IT).
- 2012 Grand Prize Louis D. from Institut de France
- 2011 Médaille Jules Haag, société française de microtechnique et chronométrie
- 2011 A. von Humboldt -Gay-Lussac Award
- 2008 ERC Advanced Research Grant laureate of the European Union (2009-2013)
- 2005 "Three physicists" prize (FR). Cold atoms and quantum gases.
- 2000 Mergier-Bourdeix Grand Prize of the French Academy of Sciences.
- 1993 European Time and Frequency Prize: fountain clocks.
- 1993 Philip-Morris Prize: cold atom clocks.
- 1988 Science and Defence Young Researcher Prize.

Publication record: 174 papers in peer-reviewed journals, over 12 500 citations, h-index: 57 (source ISI web of Science). Most cited papers: Formation of matter-wave bright solitons, Quasi-pure Bose-Einstein condensate immersed in a Fermi sea, Experimental study of the BEC-BCS crossover region in lithium 6, Bloch oscillations of atoms in an optical potential, Measurement of the hydrogen 1s-2s transition frequency by phase-coherent comparison with a microwave fountain clock, Weakly bound dimers of fermions, New limits on the drift of fundamental constants from laboratory measurements. Dual Bose Fermi superfluids. 307 invited talks in international conferences. 209 colloquia and seminars.

Other Professional experiences

Since 1992: Principal Investigator for the PHARAO cold atom space clock developed with CNES, and since 1997: Principal investigator for the European mission ACES, atomic Clock Ensemble in Space.

Member of the CNES Fundamental Physics working group 1993-2006. Chairman 1993-1995. Member of the ESA Fundamental Physics Advisory Group 2000-2004.

Member of several international conference scientific committees, including European Time and Frequency Forum, Frequency Standards and Metrology Symposium, Laser Spectroscopy Conference, International Conference on Atomic Physics,

Member of several evaluation committees in France and Europe (TCRC/TR 6042, DE), SFB 015 (AT), of the Max Planck Institute for Quantum Optics (Garching, DE) 2006-2017.

Member of the Scientific and Technical Advisory Committee of VIRGO 2006-2013.

Member of the EURAMET Research Council 2007-2016.

Member of the "Science and Metrologie" committee of the French "Académie des Sciences". Co-editor of Europhysics Letters (1989-2004).

Member of Editorial board of J. Phys B (2004-2008).

Chairman of the Comité Français de la Métrologie, LNE (present- 2010);

Reviewer for PRL, Science, Nature, PRA, EPL,...

Fellow of the American Physical Society, member of European Physical Society and French Physical Society.

Conference and workshop organization (partial list)

- Organizer of an international conference on Bose-Einstein condensation (1996) with Yvan Castin (Les Houches, FR, April 1996).

- Organizer of the International workshop on Ultracold Fermi Gases with S. Stringari and R. Combescot (Levico, IT, 4-6 March 2004).

- Organizer of the International School of Physics "Enrico Fermi", Ultracold Fermi gases, Course CLXIV, Varenna, IT, 20-30 June 2006, with M. Inguscio and W. Ketterle.

- Organizer of the Les Houches International School of Physics "Many-Body Physics with ultracold Atoms", les Houches, France, June 23-July 23 2010, with G.V. Shlyapnikov.

- Organizer of the "Fermi mixtures in Paris workshop", April 13-15, 2011 with F. Chevy

- Vice chair of the Bose-Einstein condensation conference, 2013, Sant Feliu, (SP)

- Chair of the Bose-Einstein condensation conference 2015, Sant Feliu (SP)

Supervision and training: 36 PhD students and 28 Post-docs supervised.