Dr. Serguei E. SKIPETROV

Laboratoire de Physique et Modélisation des Milieux Condensés (LPMMC)
CNRS, 25 Avenue des Martyrs, B.P. 166, 38042 GRENOBLE, France
Phone: +33 (0)4 76 88 74 97
E-mail: Sergey.Skipetrov@lpmmc.cnrs.fr, webpage: http://lpmmc.cnrs.fr/skipetrov

Research interests

- Waves in disordered media: fundamental aspects (Anderson localization of light, sound, and matter waves; topological wave physics), applications for medical imaging and noninvasive probing of complex materials
- Lasers, nonlinear & quantum optics: random lasers, mesoscopic quantum optics, optics of cold atomic clouds
- Mesoscopic solid state physics: thermal properties of nanosystems
- Information theory: physics of information, wireless communication in disordered environments

Education

- March 2007: Habilitation to advise doctoral theses (*Habilitation à diriger des recherches*), thesis "Dynamics of speckle patterns in disordered media" (in French), Joseph Fourier University (Grenoble I), France
- December 1998: Ph.D. degree in Physics & Mathematics, thesis "Diffusing-wave spectroscopy in media with spatially heterogeneous scatterer dynamics" (in Russian), Moscow State University, Russia
- January 1997: Graduated with honor from the Department of Physics, Moscow State University, Russia

Professional experience

- Since 2013: Senior scientist (*Directeur de recherche*) of 2nd (2013–2022) and 1st (since 2022) class, Centre National de la Recherche Scientifique (CNRS), LPMMC, Grenoble, France
- 2001–2013: Junior scientist (*Chargé de recherche*) of 2nd (2001–2005) and 1st (2005–2013) class, Centre National de la Recherche Scientifique (CNRS), LPMMC, Grenoble, France
- 2006: Visiting lecturer (*Chargé de cours*), University of Fribourg, Switzerland
- July 2001–August 2001: Visiting scientist, University of Fribourg, Switzerland
- 1999–2001: Staff scientist, Department of Physics, Moscow State University, Russia
- 1999–2000: Postdoctoral fellow (*Chargé de recherche associé*), CNRS, LPMMC, Grenoble, France
- 1994–1998: Undergraduate and Ph.D. student, Department of Physics, Moscow State University, Russia
- 1995–1996: Undergraduate student, Laboratoire d'Expérimentation Numérique, Université J. Fourier, Grenoble, France

Ten recent representative publications (see Web of Science or Google Scholar for the full list)

1. A. Yamilov, H. Cao, and S.E. Skipetrov, Anderson transition for light in a three-dimensional random medium, *Phys. Rev. Lett.* **134**, 046302 (2025)
2. A. Yamilov, S.E. Skipetrov, T.W. Hughes, M. Minkov, Z. Yu, and H. Cao, Anderson localization of electromagnetic waves in three dimensions, *Nature Physics* **19**, 1308 (2023)
3. S.E. Skipetrov and P. Wulles, Photonic topological Anderson insulator in a two-dimensional atomic lattice, *Comptes Rendus. Physique,* **24**(S3), 39–54 (2023)
4. B.A. van Tiggelen and S.E. Skipetrov, Longitudinal modes in diffusion and localization of light, *Phys. Rev. B* **103**, 174204 (2021)
5. S.E. Skipetrov, Localization transition for light scattering by cold atoms in an external magnetic field, *Phys. Rev. Lett.* **121**, 093601 (2018)
6. F. Riboli, F. Uccheddu, G. Monaco, N. Caselli, F. Intonti, M. Gurioli, and S.E. Skipetrov, Tailoring correlations of the local density of states in disordered photonic materials, *Phys. Rev. Lett.* **119**, 043902 (2017)
7. S.E. Skipetrov and I.M. Sokolov, Magnetic-field-driven localization of light in a cold-atom gas, *Phys. Rev. Lett.* **114,** 053902 (2015)
8. S.E. Skipetrov and I.M. Sokolov, Absence of Anderson localization of light in a random ensemble of point scatterers, *Phys. Rev. Lett.* **112,** 023905 (2014)

9. H. Hu, A. Strybulevych, J.H. Page, S.E. Skipetrov, and B.A. van Tiggelen, Localization of ultrasound in a three-dimensional elastic network, *Nature Physics* **4,** 945 (2008)
10. S.E. Skipetrov, A. Minguzzi, B.A. van Tiggelen, and B. Shapiro, Anderson localization of a Bose-Einstein condensate in a 3D random potential, *Phys. Rev. Lett.* **100,** 165301 (2008)

PhD students and postdocs

- Julia Rocha Costa, PhD since 2023: "Anderson localization of light" (co-directed with Bart van Tiggelen)
- Sébastien Lucas, PhD since 2023: "Light in atomic lattices for applications in quantum information" (co-directed with Christian Miniatura)
- Jules Gourhand, PhD 2023–2025: "Mesoscopic wave physics in a fish school" (co-directed with Philippe Roux)
- Pierre Wulles, PhD 2021–2024: "Topological photonics in two-dimensional atomic lattices". Now scientific software engineer at CEA (Grenoble).
- Manutea Candé, PhD 2011–2014: "Entangled photons in disordered media: From two-photon speckle patterns to Schmidt decomposition".
- Arthur Goetschy, PhD 2008–2011: "Light in disordered atomic systems: Euclidean matrix theory of random lasing". Now assistant professor at ESPCI ParisTech (since 2014), Institut Langevin, Paris, France.
- Nicolas Cherroret, PhD 2006–2009: "Coherent transport of waves in random media: from mesoscopic correlations to Anderson localization". Now CNRS junior scientist (since 2013), Laboratoire Kastler Brossel, Paris, France.
- Jose Maria Escalante Fernández, postdoc 2015–2017: "Anderson localization of vector waves". Now senior research technician at the Instituto Tecnologico de la Energia, Valencia, Spain.
- Vladimir Yu. Fedorov, postdoc 2008–2009: "Quantum optics of disordered media". Now researcher at the Lebedev Physical Institute, Moscow, Russia.
- Vitalie Eremeev, postdoc 2008–2009: "Cold atoms for random optical laser". Now associate professor at the Faculty of Engineering, Universidad Diego Portales, Santiago de Chile, Chili.

Teaching

- Lecture course "Optics of random media" (Master level), University of Fribourg, Switzerland (2006)
- Internship supervision of 12 Master students at Moscow State University, J. Fourier University, and University Grenoble Alpes
- Tutorials in physics for mathematics students (1st an 2nd years); tutorials in computational physics for physics students (4th year), Moscow State University (2000–2001)
- Participation in 31 PhD and *Habilitation* thesis committees since 2007

Distinctions

- CNRS Bronze Medal (2006)
- 1st Young Scientist Prize for the best scientific work (doctoral thesis) in optics and spectroscopy, Center for Fundamental Optics and Spectroscopy, Ministry of Education and Research, Russia (1998)

Funding

- Mission pour les Initiatives Transverses et Interdisciplinaires—MITI (CNRS), project "Mesoscopic wave physics in a fish shoal" (PoissOndes) in the framework of the program "80|PRIME", principal investigator (2023–2026)
- French National Research Agency—ANR, project "Localization of Light in Disordered Topological Metamaterials" (LOLITOP), principal investigator (2020–2025)
- French National Research Agency—ANR, project "Anderson Localization of Vector Waves" (LOVE), principal investigator (2014–2018)
- CNRS PICS project "Ultrasound at the Anderson Localization Transition" (France-Canada), principal investigator (2014–2016)
- Russian Ministry of Education and Research, program of cooperation with foreign scientists, project "Collective Effects in Optics of Cold Atom Gases", French coordinator (2012–2013)
- French Ministry of Foreign Affairs, *Germaine de Staël* program (France-Switzerland), project "Optics of Disordered Materials", French coordinator (2009–2010)

- French National Research Agency—ANR, project "Cold Atoms for Random Optical Laser" (CAROL), coordinator of one of the 3 partner teams (2006–2010)
- French Ministry of Education and Research, Research-Educational Network RFR "Quantum Optics of Disordered Media", coordinator (2006–2009)
- French-German International Research Training Group "Soft Condensed Matter Physics of Model Systems", Strasbourg–Konstanz–Grenoble, project leader (2006–2009)
- Institute of Condensed Matter Physics (Grenoble), project "Thermal Studies of Phase Coherent Phenomena" (2005)
- INTAS Young Scientist Fellowship (2001)
- Young Scientist Fellowship of the International Center for Fundamental Physics in Moscow (1998)

Administrative duties

- Since 2021: Director of the Laboratoire de Physique et Modélisation des Milieux Condensés—LPMMC UMR 5493 of CNRS & Université Grenoble Alpes
- 2016–2021: Member of the French National Committee for Scientific Research (section 5 "Condensed matter physics: structure and dynamics")
- 2020: Deputy director of the Laboratoire de Physique et Modélisation des Milieux Condensés—LPMMC UMR 5493 of CNRS & Université Grenoble Alpes
- 2015–2019: *Adjoint à la direction* of the Laboratoire de Physique et Modélisation des Milieux Condensés—LPMMC UMR 5493 of CNRS & Université Grenoble Alpes
- 2009–2016: Director of the national research network GDR 3219 of CNRS "Mesoscopic Physics of Waves for Imaging in Complex Media"—MésoImage

---

Services to the academic community

- Referee for scientific journals published by APS, Springer Nature, IOP, AIP, EPS, Optica Publishing Group, etc. (see Web of Science for recent review activity). APS Outstanding Referee, IOP Trusted Reviewer
- Referee for funding & evaluation agencies: ERC–European Research Council, ANR (France), HCERES (France), DFG (Germany), U.S.–Israel Binational Science Foundation
- Guest editor for PNAS journal (1 article)

Organization of scientific events

- Co-organizer of the workshop "Topology and Disorder in Wave Physics" (Cargèse, Corse, France, November 16–22, 2025)
- Co-organizer of the workshop "Disorder and Chaos" (Grenoble, France, November 14–15, 2019)
- Organizer of the workshop "Multiple Scattering and Localization of Light" (Grenoble, France, November 22, 2018)
- Co-organizer of the workshop "Strongly Disordered Optical Systems: From the White Paint to Cold Atoms" (Cargèse, Corsica, September 26–30, 2016)
- Organizer of the Roger Maynard Memorial Workshop (Grenoble, France, March 10–11, 2016)
- Organizer of the workshop "Waves and Imaging in Random Media" (Institut Henri Poincaré, Paris, November 9–10, 2015)
- Co-organizer of the summer school "Waves and Disorder" (Cargèse, Corsica, July 1–11, 2014)
- Co-organizer of the Workshop on Coherent Phenomena in Disordered Optical Systems (Trieste, Italy, May 26–30, 2014)
- Organizer of the workshop "Waves in Complex Media" (Grenoble, France, December 11–13, 2013)
- Organizer of the workshop "Recent Developments in Wave Propagation and Imaging in Complex Media" (Institut Henri Poincaré, Paris, November 7–9, 2012)
- Co-organizer of the mini-colloquium "Wave Propagation in Disordered Media" in the framework of the 13$^{\text{th}}$ Condensed Matter Days of the French Physical Society (Montpellier, August 27–31, 2012)
- Co-organizer of the workshop "Random Matrix Theory for Wave Propagation in Disordered Media" (Paris, December 12, 2011)
- Co-organizer of the workshop "Correlations, Fluctuations and Disorder" (Grenoble, December 13–15, 2010)
- Co-organizer of the summer school "Mesoscopic Physics in Complex Media" (Cargèse, Corsica, July 12–16, 2010)
- Organizer of the workshop "Mesoscopic Physics of Waves for Imaging in Complex Media" (Institut Henri Poincaré, Paris, October 29–30, 2009)

- Planning group member of the French-US symposium "Frontiers of Science" (Roscoff, November 20–22, 2008)
- Co-director of the summer school "Imaging, Communication and Disorder" (Cargèse, Corsica, June 12–17, 2006)
- Co-organizer of the workshop "Waves in Complex Media: Soft Matter and Granular Materials" (ESPCI, Paris, December 8–9, 2004)
- Co-organizer of the workshop "Communication in Disordered Media" (Henri Poincaré Institute, Paris, June 20, 2003)
- Co-director of the NATO Advanced Study Institute "Wave Scattering in Complex Media: From Theory to Applications" (Cargèse, Corsica, June 10–22, 2002)