Special Issue

Theory and Simulations of Cold atomic Fermi systems: A Quantum Many-Body Laboratory

Message from the Guest Editor

The amazing experimental control and accuracy that can be currently achieved in cold atoms give us a unique possibility to observe quantum mechanics at work with unprecedented resolution. We are now able to literally engineer quantum Hamiltonians and to shed light into fascinating physical phenomena, such as fermion pairing and superfluidity. The subtle interplay between quantum mechanics, quantum statistics, and interatomic forces frequently gives rise to puzzling and counterintuitive exciting behaviors, resulting in novel phases of matter, such as exotic superfluid phases with possible important topological properties. Moreover, the unique flexibility that is available in cold Fermi gases, where, for example, the interatomic forces can be tuned by controlling an external magnetic field, allows us to mimic the conditions that exist in some of the most mysterious systems in the universe, such as unconventional superconductors and even nuclear matter inside neutron stars. [...]

Guest Editor

Dr. Ettore Vitali

Department of Physics, California State University Fresno, Fresno, 2345 E. San Ramon Ave. M/S MH37, Fresno, CA 93740, USA

Deadline for manuscript submissions

closed (15 September 2021)

Atoms

an Open Access Journal by MDPI

Impact Factor 1.5
CiteScore 3.1

mdpi.com/si/46219

Atoms
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
atoms@mdpi.com

mdpi.com/journal/atoms

Atoms

an Open Access Journal by MDPI

Impact Factor 1.5
CiteScore 3.1

mdpi.com/journal/atoms

About the Journal

Message from the Editor-in-Chief

The scope of *Atoms* is deliberately wide and encompasses a large part of theoretical and experimental atomic,
molecular, nuclear, and chemical physics in order to encourage cross-disciplinary connections, while supporting the more traditional idea of individual subfields. The journal is also interested in papers concerning
the computation and compilation of data related to applications in the above areas. Details of experimental methods and codes are welcome. Your research is taken seriously and peer-reviewed with care. I encourage you
to contact me or any of the Editorial Board Members for further information.

Editor-in-Chief

Prof. Dr. Pascal Quinet
1. Physique Atomique et Astrophysique, Université de Mons, B-7000 Mons, Belgium
2. IPNAS, Université de Liège, B-4000 Liège, Belgium

Author Benefits

Open Access

— free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, ESCI (Web of Science), Astrophysics Data System, Inspec, CAPlus / SciFinder, INSPIRE, and other databases.

Journal Rank:

CiteScore - Q2 (Nuclear and High Energy Physics)

MDPI