PHYSICAL REVIEW A

covering atomic, molecular, and optical physics and quantum science

LEAD EDITOR
JAN MICHAEL ROST
(Max Planck Institute for the Physics of Complex Systems)

CHIEF EDITOR
THOMAS PATTARD
(American Physical Society)

ASSOCIATE EDITORS
BÁRBARA LOPES AMARAL
(Universidade de São Paulo)

UGO ANCARANI
(Université de Lorraine)

FRANCO DALFOVO
(Università di Trento)

GABRIELE DE CHIARA
(Queen's University Belfast)

DANIEL FELINTO
(Federal University of Pernambuco)

NICOLÒ FORCELLINI
(American Physical Society)

DAVIDE GIROLAMI
(Politecnico di Torino)

SCOTT C. GLANCY
(National Institute of Standards and Technology)

ERIN KNUTSON
(American Physical Society)

DANIEL LEYKAM
(National University of Singapore)

BILL MUNRO
(Okinawa Institute of Science and Technology)

FRANK NARDUCCI
(Naval Postgraduate School)

ALEJANDRO POZAS-KERSTJENS
(University of Geneva)

XIANGYU YIN
((American Physical Society)

AONAN ZHANG
(University of Oxford)

SENIOR ASSISTANT EDITOR
JILL M. GARGANO

ASSISTANT EDITOR
TERRE ARENA

EDITORIAL BOARD

Term ending 31 December 2026

A. BERTOLDI	*Atom Interferometry, Cavity and Waveguide QED with Ultracold Atoms*
N. CHANCELLOR	*Quantum Computing and Quantum Algorithms*
A. DEL CAMPO	*Quantum Information, Dynamics and Control, Phase Transitions, Chaos and Integrability*
V. KONOTOP	*Matter Waves, Nonlinear Optics, Soliton Theory, and non-Hermitian Systems*
L. C. KWEK	*Quantum Information, Quantum Cryptography*
H-K. LO	*Quantum Cryptography*
M. PARIS	*Quantum Optics, Quantum Information, Open Quantum Systems, and Quantum Walks*
J. RUOSTEKOSKI	*Quantum Optics, Cold Atomic Gases, Light-Matter Interactions*

Term ending 31 December 2027

F. AGOSTINI	*Chemical Physics*
A. ALBERUCCI	*Photonics, Nonlinear Optics, Light-Matter Interaction*
J. FEIST	*Attosecond Physics, Quantum Nanophotonics, Molecular Polaritonics*
I. HEN	*Quantum Computing, Quantum Algorithms*
F. MINTERT	*Quantum Optics and Quantum Information*
G. MORIGI	*Theoretical Quantum Optics, Open Quantum Systems, Ultracold Atoms*
G. QUIROZ	*Quantum Control and Sensing, Quantum Algorithm Design*
A. SALAM	*Molecular and Macroscopic QED, Intermolecular Interactions, Optical Activity and Molecular Chirality*
L. YOU	*Atomic Quantum Gases, Quantum Optics, and Quantum Computation*

Term ending 31 December 2028

S. ASHHAB	*Superconducting Circuits, Adiabatic Quantum Computing, Quantum Simulation*
J. BAVARESCO	*Quantum information; Quantum correlations; Foundations of quantum computing*
A. CERJAN	*Photonic systems, Topological Photonics, and Computational Photonics*
A. DANTAN	*Quantum Optics and Optomechanics*
J. GINGES	*Precision Atomic Theory, Atomic Structure, and Tests of Fundamental Physics in Atoms and Molecules*
G. GRIBAKIN	*Theoretical Atomic and Molecular Physics, Positron Interactions*
B. HE	*Nonlinear and Quantum Optics, Optomechanics, Photonic Quantum Information Processing*
D.E. LIU	*Quantum computer architecture; Characterization and benchmarking of quantum noise; Quantum error mitigation*
G. MODUGNO	*Ultracold atoms and molecules*
T. OZAWA	*Ultracold Atoms, Quantum Simulation, Topological Physics in Atoms and Photons*
A. RIVAS	*Open Quantum Systems, Quantum Information, Quantum Optics*
N. ROHRINGER	*Atoms and Molecules in Strong Fields*
P. XUE	*Quantum Information, Quantum Walks, and non-Hermitian Physics*

Email: pra@aps.org
Web: https://journals.aps.org/pra/
Submissions:
https://authors.aps.org/ Submissions/

American Physical Society

Chief Executive Officer	JONATHAN A. BAGGER
Editor in Chief	ROBERT ROSNER
Chief Publications Officer	RACHEL BURLEY
Director of Publishing	JEFF LEWANDOWSKI
Chief Information Officer	MARK D. DOYLE
Executive Editor	JESSICA THOMAS

One Physics Ellipse
College Park, MD 20740-3844

Member Subscriptions:
APS Membership Department
One Physics Ellipse
College Park, MD 20740-3844
Phone: (301) 209-3280
Fax: (301) 209-0867
Email: membership@aps.org

Institutional Subscriptions:
APS Subscription Services
P.O. Box 41
Annapolis Junction, MD 20701
Toll free: (888) 339-9655
Phone: (301)617-7809
Email: subs@aps.org

Copyright © 2026 American Physical Society. All rights reserved.

Physical Review A™is a trademark of the American Physical Society, registered in the United States, Canada, European Union and Japan.

Rights and Permissions: https://journals.aps.org/copyrightFAQ.html

Copying: No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the written permission of the publisher, except as stated below. Single copies of individual articles may be made for private use or research. Authorization is given to copy articles beyond the use permitted by Sections 107 and 108 of the U.S. Copyright Law, provided the copying fee of $25.00 per copy per article is paid to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA.

Reproduction of an entire article in a reprint collection, or for advertising or promotional purposes, or republication in any form requires permission from APS. Permission must be sought via Aptara's SciPris™platform. To request permission to republish, refer to the Reuse and Permissions link that can be found (online) on each APS article page and provide the requested information.

Other Use: Permission is granted to quote from the journal with the customary acknowledgment of the source. Permission must be sought using Aptara's SciPris™platform. To request permission to reproduce a figure, table, or excerpt of an article refer to the Reuse and Permissions link that can be found on each APS article page and provide the requested information. Authorization for private use or research does not extend to systematic or multiple reproduction, to copying for promotional purposes, to distribution in any format, or to republication in any form. In all such cases, specific permission from APS must be obtained.

***Physical Review A* [ISSN: 2469-9926 (print), 2469-9934 (online); CODEN PLRAAN; printed in USA] is published monthly by the American Physical Society, 100 Motor Parkway, Suite 110, Hauppauge, NY 11788**