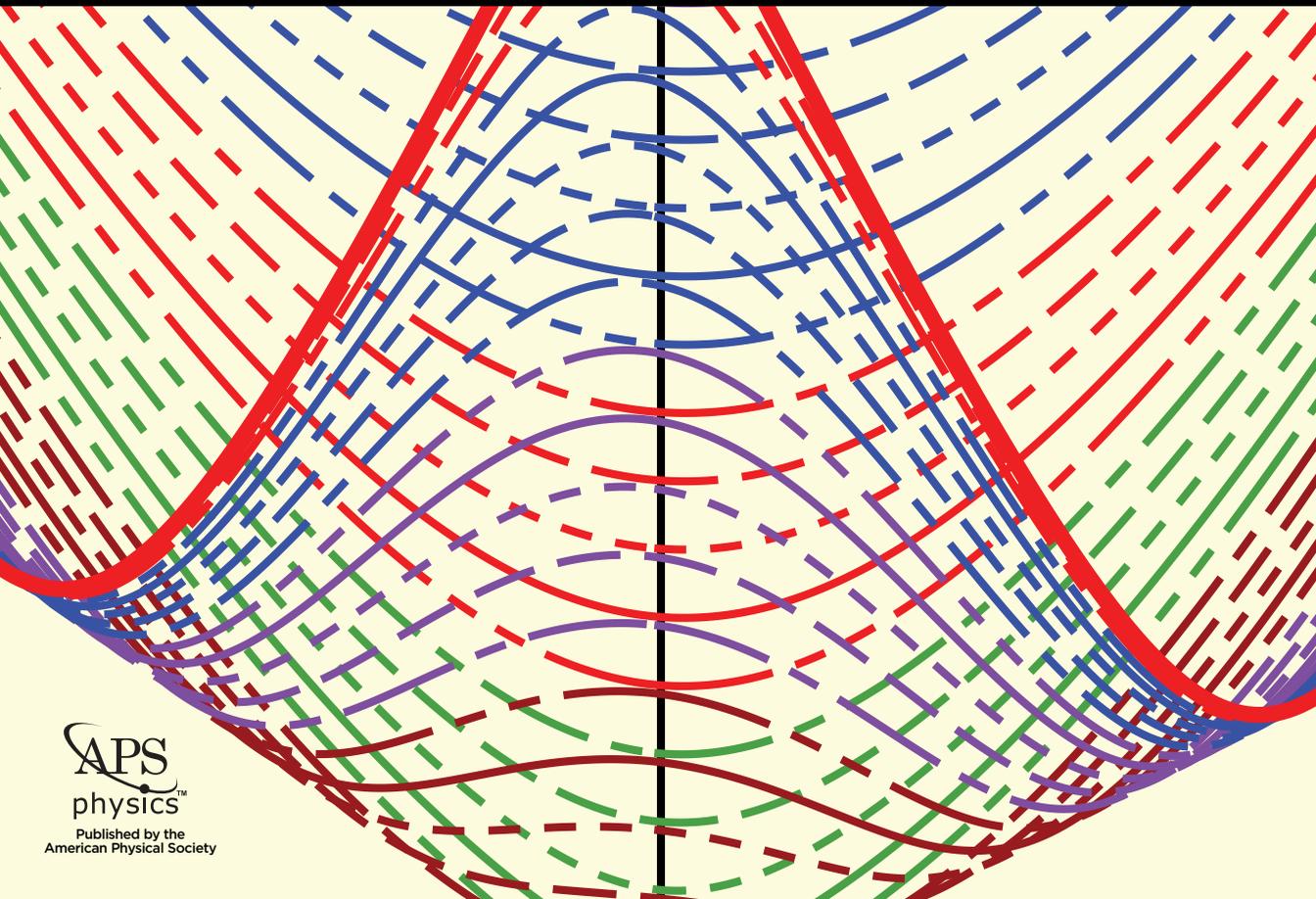
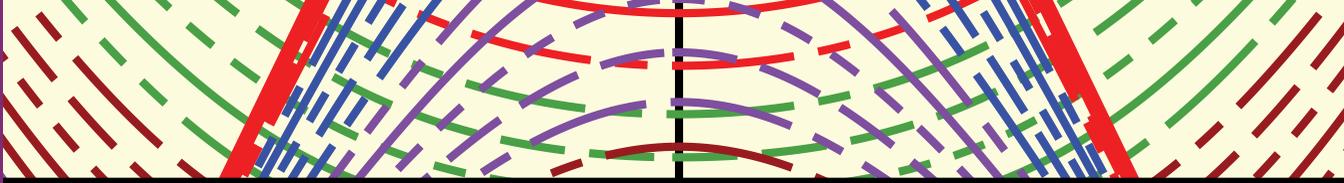


2018 Physical Review Journals Catalog







2018 Physical Review Journals Catalog

Founded in 1899, the American Physical Society (APS) strives to advance and diffuse the knowledge of physics. In support of this objective, APS publishes primary research and review journals, three of which are open access.

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From the APS Publisher: Celebrating 125 Years of Excellence

It gives me great pleasure to welcome you to the 2018 *Physical Review* Journals Catalog, containing details of all the scholarly publications produced by the American Physical Society (APS). This is a year of special significance for APS, as it marks the 125th Anniversary of the first publication in 1893 of *Physical Review* – the forerunner of the current suite of journals published by APS. While over a century has passed since their inception, the *Physical Review* journals continue to set the standard for physics publishing in quality, breadth, and depth of coverage, making APS the leading global society publisher of physics research.

The current portfolio is headed up by APS's flagship journal, *Physical Review Letters* (PRL), the world's premier physics letters journal, and APS's most highly selective journal *Physical Review X* (PRX), one of three all-open access journals in the portfolio. PRL and PRX publish the very best and most important discoveries across the entire arc of physics. These two broad-scope journals are supported by the outstanding *Physical Review* series of specialist journals, which publish high-impact, innovative, and original research. *Reviews of Modern Physics* continues to set the standard for comprehensive, in-depth, and authoritative reviews in all areas of physics.

The 2018 catalog introduces *Physical Review Materials* (PRMaterials), a new online-only journal devoted to the publication of high-quality, innovative research on materials. PRMaterials aims to expand the scope of the existing *Physical Review* journals beyond the current emphasis on the physics of materials and offers another publishing option for authors from a wide variety of materials research fields who may not previously have had a home in the *Physical Review* journals.

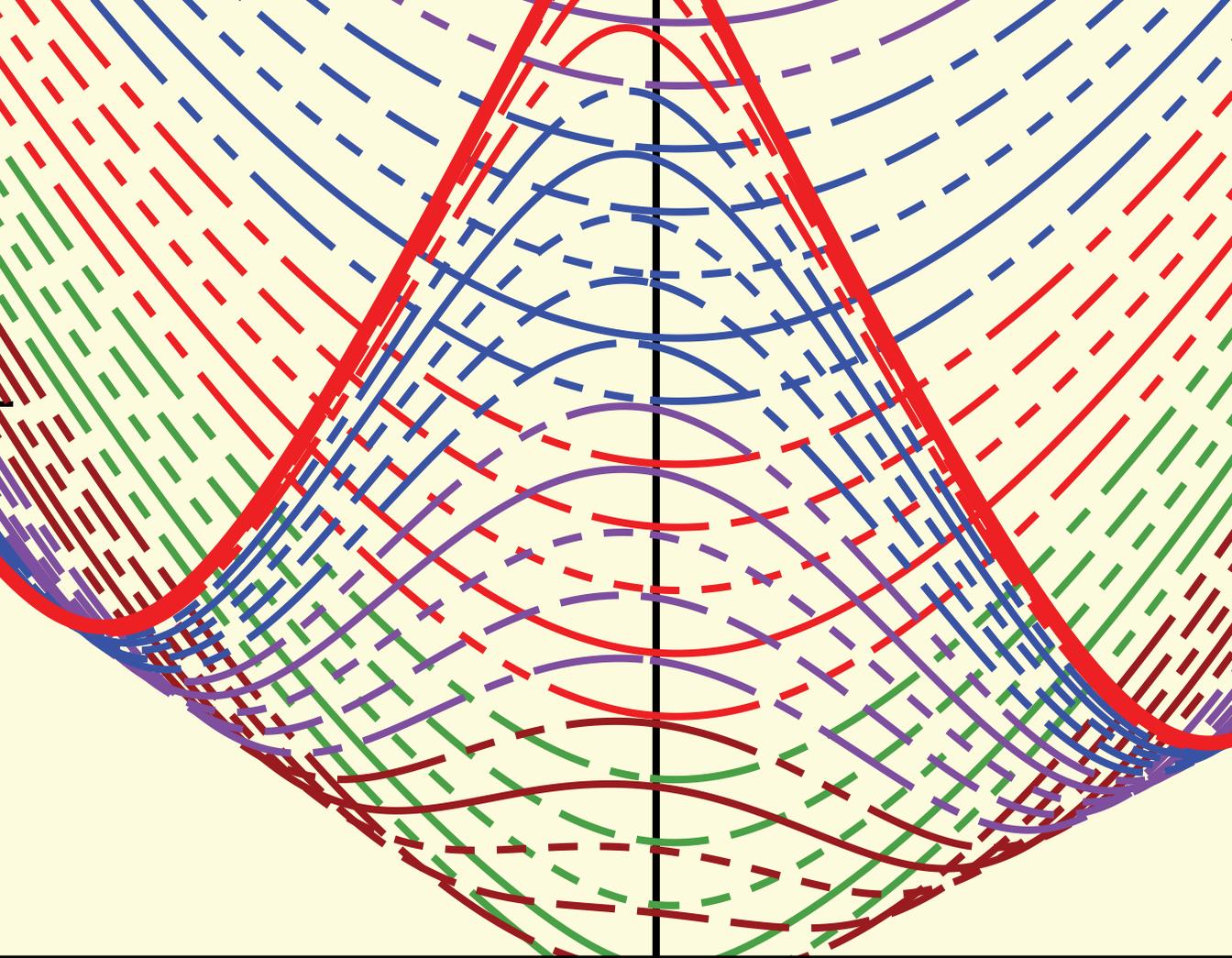
Open access is another area of important development for the *Physical Review* journals. In 2018, APS will embark on another experiment in open-access publishing when it joins the Sponsoring Consortium for Open Access Publishing in Particle Physics (SCOAP³). Under this partnership, from January 1, all high-energy physics (HEP) papers meeting the SCOAP³ qualifying criteria appearing in PRL, *Physical Review C*, and *Physical Review D* will be made available in open-access format under a CC-BY 4.0 license.

Finally, 2018 sees the 25th anniversary of *Physical Review E* (PRE), which was developed out of *Physical Review A* in 1993. In the ensuing quarter century, PRE has established itself as a leading international interdisciplinary journal focused on collective phenomena of many-body systems, statistical physics, and nonlinear dynamics. We are delighted to mark its silver jubilee here.

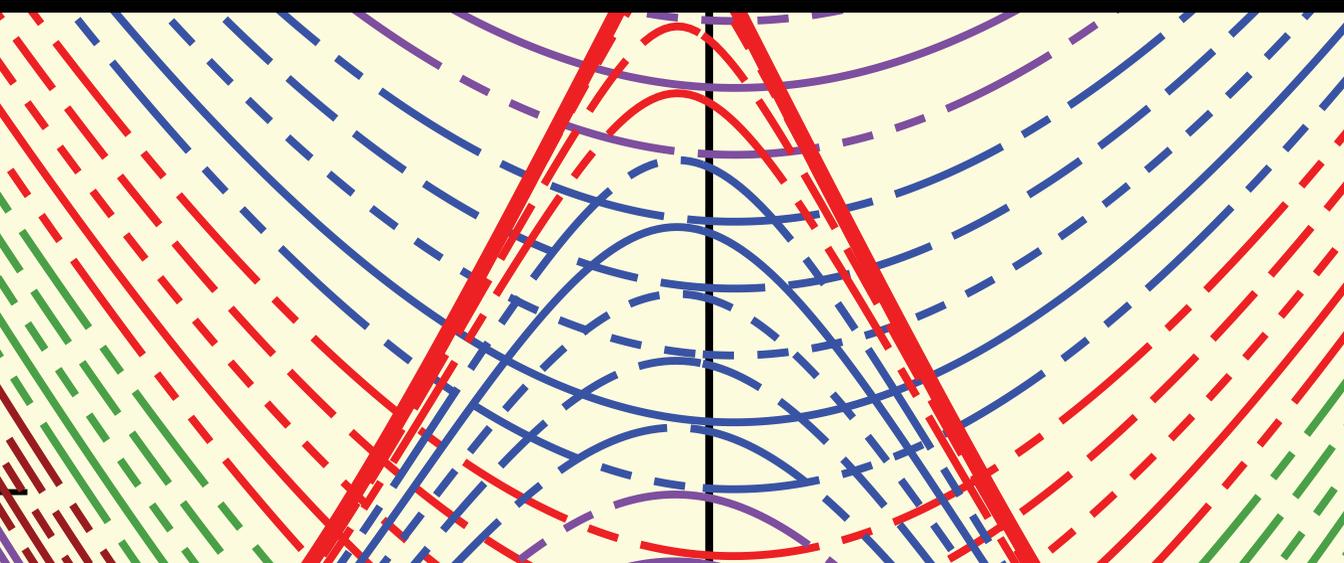
The mix of tradition and innovation outlined in the 2018 catalog neatly encompasses the *Physical Review* journals - grounded in APS's mission to advance and diffuse physics, while also engaging with the latest cutting-edge physics research and developments in scholarly publishing. This drive to serve the scientific research community has remained unchanged for the past 125 years and will continue to guide APS and the world-class *Physical Review* portfolio long into the future.



Matthew Salter, PhD
Publisher
American Physical Society



Journal Descriptions



Physical Review Letters

journals.aps.org/prl



@PhysRevLett

IMPACT AND IMMEDIACY DATA

2016 Impact Factor

8.462

2016 Immediacy Index

2.923

JOURNAL METRICS

Total Citations

>6.2 million

2016 Published Articles

2,478

2016 Published Pages

13,121

2016 Article Downloads

>10 million

2018 PUBLICATION FREQUENCY

Volumes 120, 121 (52 issues)

ISSN

0031-9007 (print)

1079-7114 (online)

1092-0145 (CD-ROM)

CODEN: PRLTAO

EDITORS

Hugues Chaté
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Reinhardt B. Schumann*
American Physical Society

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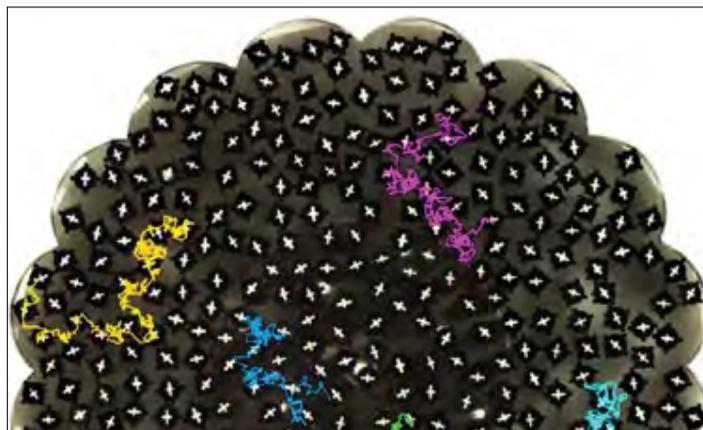
* Managing Editor

Physical Review Letters (PRL) is the world's premier physics letter journal and the American Physical Society's flagship publication. Since 1958 it has contributed to APS's mission to advance and diffuse the knowledge of physics by publishing seminal research by Nobel Prize-winning and other distinguished researchers in all fields of physics.

PRL publishes short, high-quality reports of the most influential developments and transformative ideas in the full arc of fundamental and interdisciplinary physics research. It is distinctive in the depth and breadth of its coverage of the broad subfields of physics, including:

- General physics, including statistical and quantum mechanics and quantum information
- Gravitation, astrophysics, and cosmology
- Elementary particles and fields
- Nuclear physics
- Atomic, molecular, and optical physics
- Nonlinear dynamics, fluid dynamics, and classical optics
- Plasma and beam physics
- Condensed matter physics
- Polymers, soft matter, biological and interdisciplinary physics, including networks

From January 1, 2018, PRL will join the SCOAP³ consortium. All high-energy physics articles meeting the SCOAP³ criteria published after that date in PRL will be made available in open access format.



"Velocity Distribution of a Homogeneously Driven Two-Dimensional Granular Gas"

Christian Scholz and Thorsten Pöschel
Phys. Rev. Lett. **118**, 198003 (2017)

Physical Review X

journals.aps.org/prx

 @PhysRevX

IMPACT AND IMMEDIACY DATA

2016 Impact Factor

12.789

2016 Immediacy Index

2.589

JOURNAL METRICS

Total Citations

>13.9K

2016 Published Articles

204

2016 Published Pages

2,878

2016 Article Downloads

>400K

2018 PUBLICATION FREQUENCY

Volumes 8, (4 issues)

ISSN

2160-3308 (online)

CODEN: PRXHAE

Physical Review X (PRX) is an online-only, fully open-access journal that places a high value on innovation, quality, and long-term impact in the science it publishes. PRX is highly selective. It seeks to publish papers from all areas of pure, applied, and interdisciplinary physics that have the potential for a long-lasting and profound impact in their relevant fields. PRX provides high visibility and broad dissemination to its papers.

PRX is renowned for its highly personalized and responsive editorial process that brings together authors, editors, and referees in an interactive, reasoned dialog to guide each article through the rigorous selection process and produce the best possible outcome. PRX offers flexible article lengths and formats that allow authors to engage and inform a broad audience, while also providing the scientific substance sought by specialists.

Submitted manuscripts should meet one or more of the following criteria:

- Make a fundamental theoretical and/or experimental discovery
- Create a new paradigm or make a paradigm shift
- Establish a fruitful analogy or connection between different subfields or topical areas of physics, or between physics and other scientific disciplines
- Push an established field into a new direction
- Significantly advance the state of the art of a field, or provide important and substantive follow-up developments to path-breaking papers

EDITORS

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M. Cristina Marchetti
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Ling Miao*
American Physical Society

A full list of editors and board members is available online.

* Managing Editor



“Plasma Membrane is Compartmentalized by a Self-Similar Cortical Actin Meshwork”
Sanaz Sadegh, Jenny L. Higgins, Patrick C. Mannon, Michael M. Tamkun, and Diego Krapf
Phys. Rev. X **7**, 011031 – Published 9 March 2017

Reviews of Modern Physics

journals.aps.org/rmp

IMPACT AND IMMEDIACY DATA

2016 Impact Factor

36.917

2016 Immediacy Index

6.634

JOURNAL METRICS

Total Citations

>640K

2016 Published Articles

46

2016 Published Pages

1,776

2016 Article Downloads

>1M

2018 PUBLICATION FREQUENCY

Volume 90 (4 issues)

ISSN

0034-6861 (print)

1539-0756 (online)

1538-4527 (CD-ROM)

CODEN: RMPHAT

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JOURNAL MANAGER
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and board members is
available online.

Reviews of Modern Physics (RMP) is the world's premier physics review journal and the most highly cited *Physical Review* publication. Written by leading international researchers, RMP's in-depth essays provide outstanding coverage of a topic and give context and background for current research trends.

Since 1929, RMP has provided an unrivalled venue for authoritative review papers in all fields of physics.

- Review articles present the current status of a given topic, with historical background, a critical distillation of research progress, and a summary of possible future developments.
- Colloquia communicate results at the frontiers of physics, which may impact several subfields.

RMP also publishes Nobel Lectures, text of the addresses given in conjunction with the awards.



"Experimental soft-matter science"
Sidney R. Nagel
Rev. Mod. Phys. **89**, 025002 (2017)

Physical Review A

covering atomic, molecular, and optical physics and quantum information

journals.aps.org/pr



IMPACT AND IMMEDIACY DATA

2016 Impact Factor

2.925

2016 Immediacy Index

0.837

JOURNAL METRICS

Total Citations

>1.6M

2016 Published Articles

2,806

2016 Published Pages

24,433

2016 Article Downloads

>2.5M

2018 PUBLICATION FREQUENCY

Volumes 97, 98 (12 issues)

ISSN

2469-9926 (print)

2469-9934 (online)

2469-9942 (CD-ROM)

CODEN: PLRAAN

Physical Review A (PRA) publishes important developments in the rapidly evolving area of atomic, molecular, and optical (AMO) physics, quantum information, and related fundamental concepts.

Established in 1970, PRA is the journal of choice for the publication of research in AMO physics and quantum information. Bridging these traditional and emerging research areas, PRA's authors and readers benefit from the widespread synergies between these fields.

Sections Include:

- Fundamental concepts
- Quantum information
- Atomic and molecular structure and dynamics
- Atomic and molecular collisions and interactions
- Atomic and molecular process in external fields, including interactions with strong fields and short pulses
- Matter waves and collective properties of cold atoms and molecules
- Quantum optics, physics of lasers, nonlinear optics, and classical optics

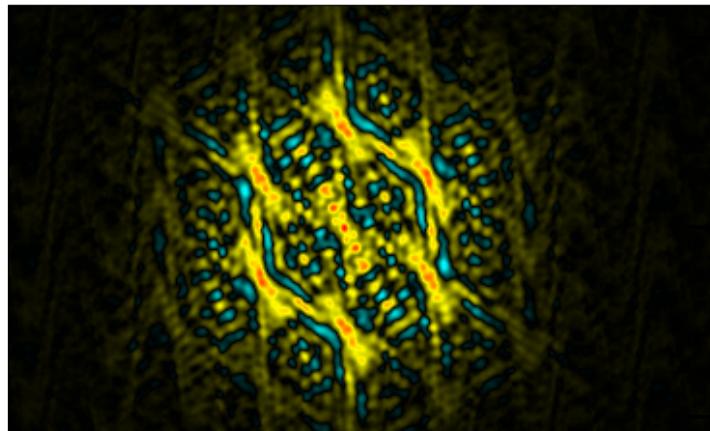
EDITORS

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Canada

Thomas Pattard*
American Physical Society

A full list of editors and board members is available online.

* Managing Editor



"Quantum kicked harmonic oscillator in contact with a heat bath"

M. Á. Prado Reynoso, P. C. López Vázquez, and T. Gorin
Phys. Rev. A **95**, 022118 (2017)

Physical Review B

covering condensed matter and materials physics

journals.aps.org/prb



@PhysRevB

IMPACT AND IMMEDIACY DATA

2016 Impact Factor

3.836

2016 Immediacy Index

1.024

JOURNAL METRICS

Total Citations

>5.1 million

2016 Published Articles

5,486

2016 Published Pages

48,835

2016 Article Downloads

>8.9 million

2018 PUBLICATION FREQUENCY

Volumes 97, 98 (48 issues)

ISSN

2469-9950 (print)

2469-9969 (online)

2469-9977 (CD-ROM)

CODEN: PRBMDO

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University of Würzburg

Anthony M. Begley*
American Physical Society

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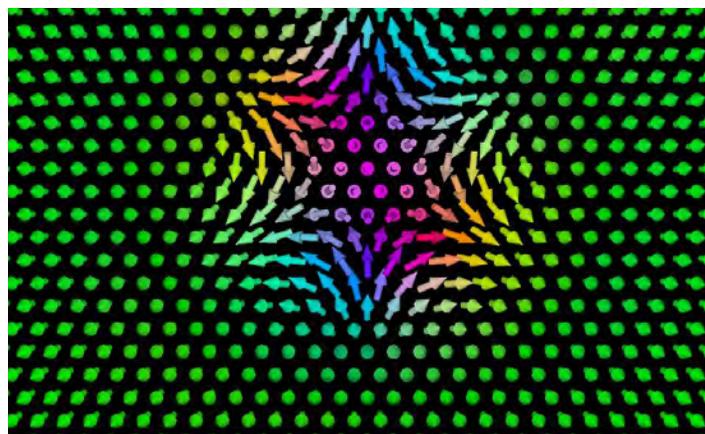
* Managing Editor

Physical Review B (PRB) is the world's largest dedicated physics journal, publishing approximately 100 new, high-quality papers each week. The most highly cited journal in condensed matter physics, PRB provides outstanding depth and breadth of coverage, combined with unrivaled context and background for ongoing research by scientists worldwide.

Since 1970, PRB has provided an authoritative venue for high-quality work in established and emerging topics in condensed matter research, making it an essential resource for the field.

Sections Include:

- Structure and phase transitions
- Ferroelectrics and multiferroics
- Disordered systems and alloys
- Magnetism
- Superconductivity
- Electronic structure, photonics, and metamaterials
- Semiconductors and mesoscopic systems
- Surfaces, nanoscience, and 2D materials
- Topological states of matter



"Formation and stability of metastable skyrmionic spin structures with various topologies in an ultrathin film"
Levente Rózsa, Krisztián Palotás, András Deák, Eszter Simon, Rocio Yanes, László Udvardi, László Szunyogh, and Ulrich Nowak
Phys. Rev. B **95**, 094423 (2017)

Physical Review C

covering nuclear physics

journals.aps.org/prc

 @PhysRevC

IMPACT AND IMMEDIACY DATA

2016 Impact Factor

3.820

2016 Immediacy Index

0.909

JOURNAL METRICS

Total Citations

>605K

2016 Published Articles

1,100

2016 Published Pages

10,519

2016 Article Downloads

>685K

2018 PUBLICATION FREQUENCY

Volumes 97, 98 (12 issues)

ISSN

2469-9985 (print)

2469-9993 (online)

2470-0002 (CD-ROM)

CODEN: PRVCAN

Physical Review C (PRC) is a leading journal in theoretical and experimental nuclear physics, publishing more than 75% of the research literature in the field.

Established in 1970, PRC is a trusted, essential resource for nuclear physics researchers, nuclear data aggregators and evaluators, and others who use nuclear science research results. PRC provides a collegial and proactive environment for researchers looking to publish in the *Physical Review* family of journals.

Sections Include:

- Nucleon-nucleon interactions, few-body systems
- Nuclear structure
- Nuclear reactions
- Relativistic nuclear collisions
- Hadronic physics and QCD
- Electroweak interaction symmetries
- Nuclear astrophysics

From January 1, 2018, PRC will join the SCOAP³ consortium. All high-energy physics articles meeting the SCOAP³ criteria published after that date in PRC will be made available in open access format.

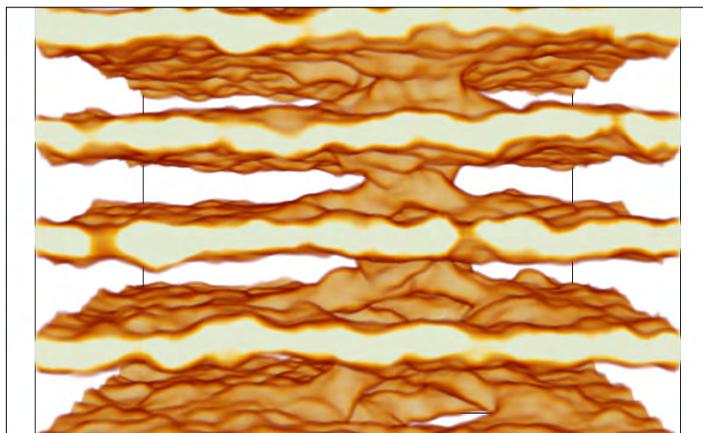
EDITORS

Benjamin F. Gibson
Los Alamos National
Laboratory

Christopher Wesselborg*
American Physical Society

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* Managing Editor



“ ‘Parking-garage’ structures in nuclear astrophysics and cellular biophysics”

D. K. Berry, M. E. Caplan, C. J. Horowitz, Greg Huber, and A. S. Schneider
Phys. Rev. C **94**, 055801 (2016)

Physical Review D

covering particles, fields, gravitation, and cosmology

journals.aps.org/prd



@PhysRevD

IMPACT AND IMMEDIACY DATA

2016 Impact Factor

4.568

2016 Immediacy Index

1.938

JOURNAL METRICS

Total Citations

>1.7M

2016 Published Articles

3,605

2016 Published Pages

47,120

2016 Article Downloads

>1.2M

2018 PUBLICATION FREQUENCY

Volumes 97, 98 (24 issues)

ISSN

2470-0010 (print)

2470-0029 (online)

2470-0037 (CD-ROM)

CODEN: PRVDAQ

Physical Review D (PRD) is a leading journal in elementary particle physics, field theory, gravitation, and cosmology and is one of the top-cited journals in high-energy physics.

Launched in 1970, PRD is one of the longest-established journals dedicated to serving the high-energy physics community.

Sections Include:

- Particle physics experiments
- Electroweak interactions
- Strong interactions
- Lattice field theories, lattice QCD
- Beyond the standard model physics
- Phenomenological aspects of field theory, general methods
- Gravity, cosmology, cosmic rays
- Astrophysics and astroparticle physics
- General relativity
- Formal aspects of field theory, field theory in curved space
- String theory, quantum gravity, gauge/gravity duality

From January 1, 2018, PRD will join the SCOAP³ consortium. All high-energy physics articles meeting the SCOAP³ criteria published after that date in PRD will be made available in open access format.

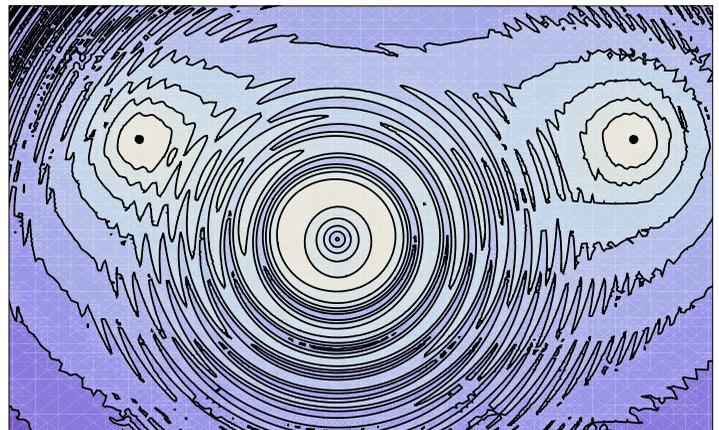
EDITORS

Erick J. Weinberg
Columbia University

Urs M. Heller*
American Physical Society

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* Managing Editor



"Interference in spectrum of radiation from doubly scattered charged particle"

M. V. Bondarenko and N. F. Shul'ga
Phys. Rev. D **95**, 056003 (2017)

Physical Review E

covering statistical, nonlinear, biological, and soft matter physics

journals.aps.org/pre



@PhysRevE

IMPACT AND IMMEDIACY DATA

2016 Impact Factor

2.366

2016 Immediacy Index

0.556

JOURNAL METRICS

Total Citations

>890K

2016 Published Articles

2,390

2016 Published Pages

22,879

2016 Article Downloads

>1.9M

2018 PUBLICATION FREQUENCY

Volumes 97, 98 (12 issues)

ISSN

2470-0045 (print)

2470-0053 (online)

2470-0061 (CD-ROM)

CODEN: PLEEE8

Physical Review E (PRE) is a broad and interdisciplinary journal focusing on collective phenomena of many-body systems. As the premier journal in the interrelated areas of statistical, nonlinear, biological, and soft matter physics, PRE covers recent developments in complex fluids, polymers, liquid crystals, and granular materials. The journal also includes sections on solid mechanics, fluid dynamics, plasma physics, computational physics, networks, and complex systems.

Established in 1993, PRE is distinguished by the breadth of the subject areas it covers and its wide distribution and readership. PRE provides an authoritative venue for high-quality work in traditional and emerging research areas, making it an important resource for multiple disciplines.

Sections Include:

- Statistical physics
- Nonlinear dynamics and chaos
- Networks and complex systems
- Biological physics
- Polymers
- Colloids, complex fluids, and active matter
- Liquid crystals
- Films and interfaces
- Granular materials
- Solid mechanics
- Fluid dynamics
- Plasma physics
- Computational physics

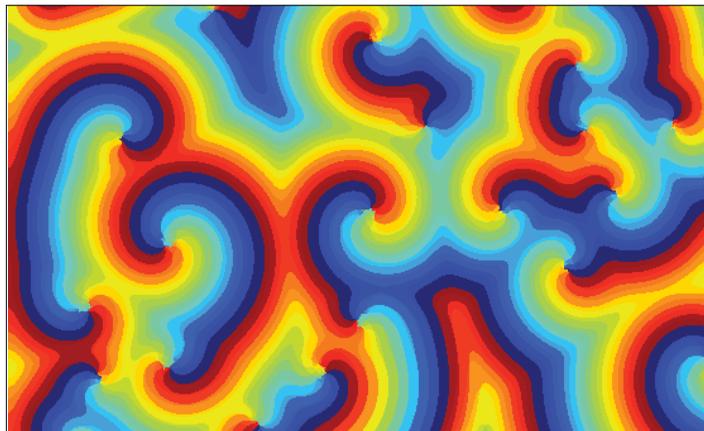
EDITORS

Eli Ben-Naim
Los Alamos National
Laboratory

Dirk Jan Bukman*
American Physical Society

A full list of editors and board members is available online.

* Managing Editor



“Weakly and strongly coupled Belousov-Zhabotinsky patterns”
Stephan Weiss and Robert D. Deegan
Phys. Rev. E **95**, 022215 (2017)

Physical Review Accelerators and Beams

journals.aps.org/prab



@PhysRevAB

IMPACT AND IMMEDIACY DATA

2016 Impact Factor
(Former Title: PRST-AB)

1.444

2016 Immediacy Index
(Current Title: PRAB)

0.266

JOURNAL METRICS

Total Citations

>20K

2016 Published Articles

207

2016 Published Pages

2,334

2016 Article Downloads

>196K

2018 PUBLICATION FREQUENCY

Volume 21 (12 issues)

ISSN

2469-9888 (online)

CODEN: PRABCJ

EDITOR

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CERN, Switzerland

JOURNAL MANAGER
Debbie Brodbar
American Physical Society

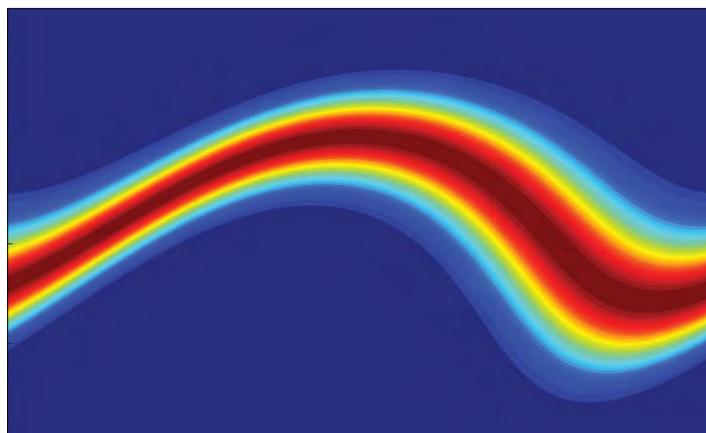
A full list of editors
and board members is
available online.

Physical Review Accelerators and Beams (PRAB) covers the full spectrum of accelerator science, technology, and applications, including subsystems, component technologies, beam dynamics, and the design, operation, and improvement of scientific and industrial accelerators of all types.

PRAB is a fully open access journal that is funded by contributions from industrial sponsors, national and international laboratories, universities, and other sources. The generous support of sponsors enables the journal to be provided without charge to both authors or readers.

PRAB covers all topics in accelerator science, applications, and technology, including:

- Low- and intermediate-energy accelerators
- Pulsed-power accelerators
- Synchrotron radiation and free-electron lasers
- High-energy accelerators and colliders
- New acceleration techniques
- Radio frequency calculations and technology
- Magnet calculations and technology
- Beam control, diagnostics, and feedback
- Cryogenics and vacuum technology
- Particle-beam sources
- Single-particle dynamics
- Low-energy, multiple-particle dynamics



"Simplified model for fast optimization of a free-electron laser oscillator"
Kai Li, Minghao Song, and Haixiao Deng
Phys. Rev. Accel. Beams **20**, 030702 (2017)

Physical Review Applied

journals.aps.org/prapplied



@PhysRevApplied

IMPACT AND IMMEDIACY DATA

2016 Impact Factor

4.808

2016 Immediacy Index

0.863

JOURNAL METRICS

Total Citations

>3.7K

2016 Published Articles

255

2016 Published Pages

2,470

2016 Article Downloads

>147K

2018 PUBLICATION FREQUENCY

Volumes 9, 10 (12 issues)

ISSN

2331-7019 (online)

2331-7043 (CD-ROM)

CODEN: PRAHB2

Physical Review Applied (PRApplied) publishes high-quality papers that bridge the gap between engineering and physics, and between current and future technologies. PRApplied welcomes papers from both the engineering and physics communities, in academia and industry.

PRApplied publishes research with strong and clear ties to applications, and that offers fresh insight into physical phenomena. The editors encourage scientists and engineers engaged in applied research to consider this journal their home for stimulating scholarly publications and discussion.

PRApplied focuses on topics including:

- Biophysics, bioelectronics, and biomedical engineering
- Device physics
- Electronics
- Technology for the harvest, storage, and transmission of energy with a focus on renewable energy technologies
- Geophysics and space science
- Industrial physics
- Magnetism and spintronics
- Metamaterials
- Microfluidics
- Nonlinear dynamics and pattern formation in natural and manufactured systems
- Nanoscience and nanotechnology
- Optics, optoelectronics, photonics, and photonic devices
- Quantum information processing, both algorithms and hardware
- Soft matter physics, including granular and complex fluids and active matter

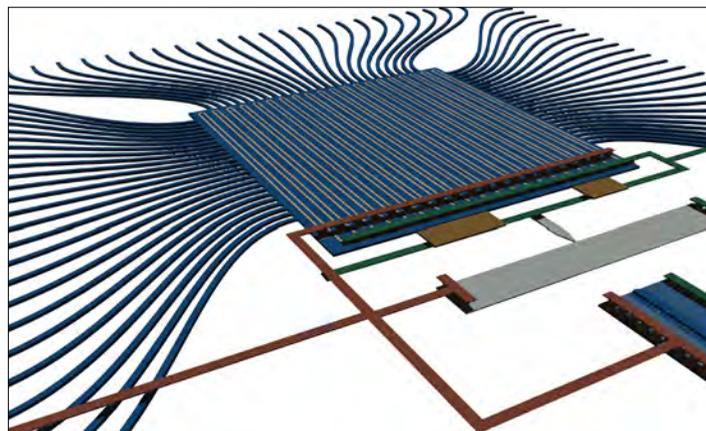
EDITORS

Stephen R. Forrest
University of Michigan

Julie Kim-Zajonz*
American Physical Society

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* Managing Editor



“Superconducting Optoelectronic Circuits for Neuromorphic Computing”

Jeffrey M. Shainline, Sonia M. Buckley, Richard P. Mirin, and Sae Woo Nam
Phys. Rev. Applied **7**, 034013 (2017)

Physical Review Fluids

journals.aps.org/prfluids



@PhysRevFluids

IMMEDIACY DATA

2016 Immediacy Index

0.188

JOURNAL METRICS

2016 Published Articles

243

2016 Published Pages

3,869

2016 Article Downloads

>53K

2018 PUBLICATION FREQUENCY

Volumes 3, (12 issues)

ISSN

2469-990X (online)

2469-9918 (CD-ROM)

CODEN: PRFHBR

Physical Review Fluids (PRFluids) is dedicated to publishing innovative research that will significantly advance the fundamental understanding of fluid dynamics. PRFluids embraces both traditional fluid dynamics topics and newer areas.

PRFluids covers all aspects of fluid dynamics research, including:

- Biological and biomedical flows
- Combustion fluid mechanics and reacting flows
- Complex and non-newtonian fluids
- Compressible and rarefied flows, kinetic theory
- Convection
- Drops, bubbles, capsules and vesicles
- Electrokinetic phenomena, electrohydrodynamics, and magnetohydrodynamics
- Geophysical, geological, urban and ecological flows
- Instability, transition, and control
- interfacial phenomena and flows
- Laminar and viscous flows
- Micro- and nanofluidics
- Multiphase, granular and particle-laden flows
- Nonlinear dynamical systems
- Transport and mixing
- Turbulent flows
- Vortex dynamics
- Wave dynamics, free surface flows, stratified and rotating flows

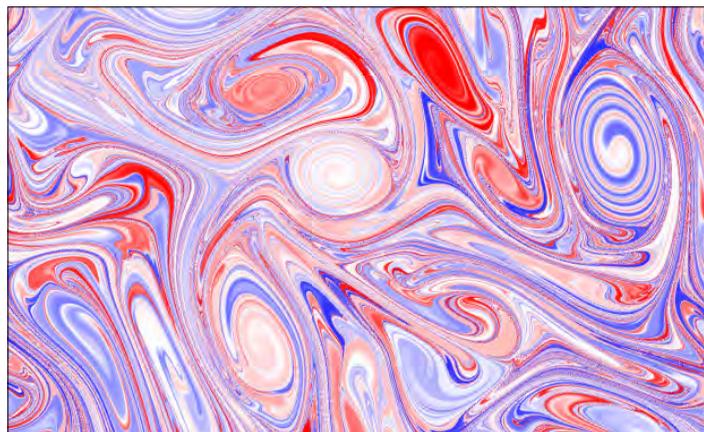
EDITORS

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Gary Leal
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Santa Barbara

JOURNAL MANAGER
Bradley Rubin

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"Optimal initial condition of passive tracers for their maximal mixing in finite time"

Mohammad Farazmand

Phys. Rev. Fluids **2**, 054601 – Published 1 May 2017

Physical Review Materials

journals.aps.org/prmaterials



@PhysRevMater

2018 PUBLICATION FREQUENCY

Volumes 2, (12 issues)

ISSN

2475-9953 (Online)

2476-0455 (CD-ROM)

CODEN: PRMHAR

Physical Review Materials (PRMaterials) is a broad-scope journal publishing high-quality, multidisciplinary research on materials. The journal serves the interdisciplinary community working on the prediction, synthesis, processing, structure, properties, and modeling of a wide range of materials.

PRMaterials provides a publication and reference venue to the expanding community of physicists, materials scientists, chemists, engineers, and scientists in related disciplines, carrying out high-quality, original research in materials.

PRMaterials covers a wide range of topics on materials research, including:

- Prediction, synthesis, design, and modeling of materials
- Crystal growth, film growth, crystallization, and kinetics
- Magnetic, ferroelectric, multiferroic, and superconducting materials
- Thin films, interfaces, surfaces, and heterostructures
- Two-dimensional materials
- Metamaterials and plasmonic, optical, and photonic materials
- Materials for energy harvesting, storage, and generation
- Glasses and amorphous materials
- Soft materials, polymers, self-assembly, biomaterials
- Electronic materials; semiconductors, metals, and dielectrics, including organics
- Topological materials
- Mechanical properties, materials structure, and phase transformations
- Nanostructures, nanocomposites, and nanomaterials

EDITORS

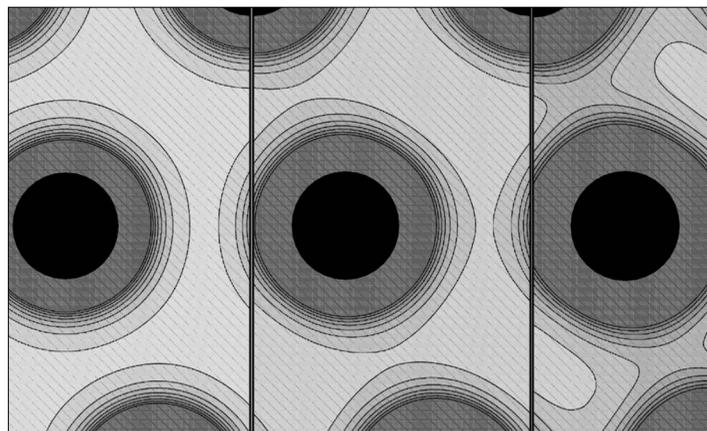
Chris Leighton
University of Minnesota

Athanasios Chantis*
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Mu Wang
American Physical Society

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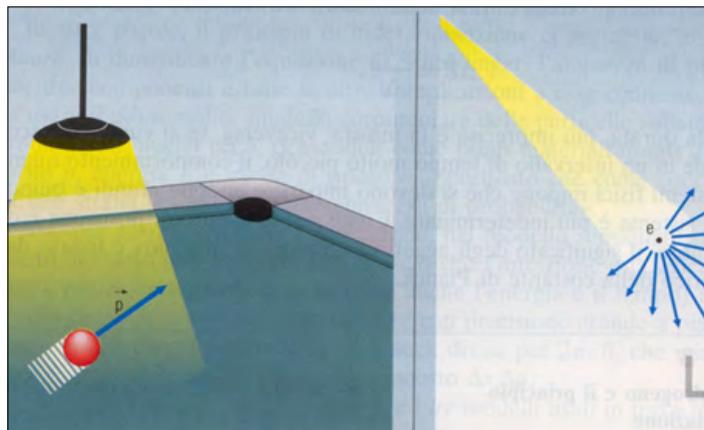
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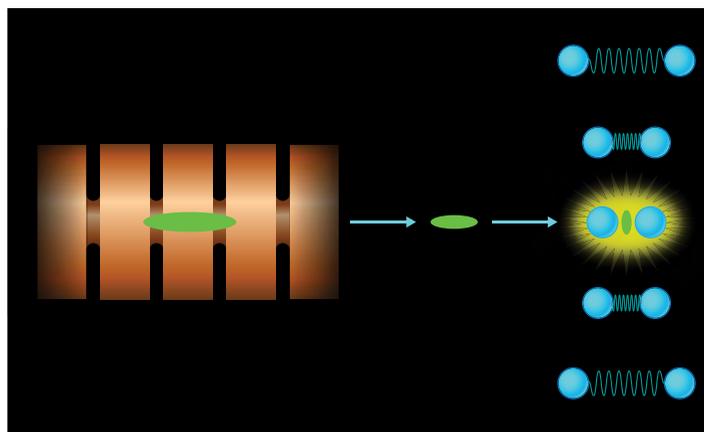
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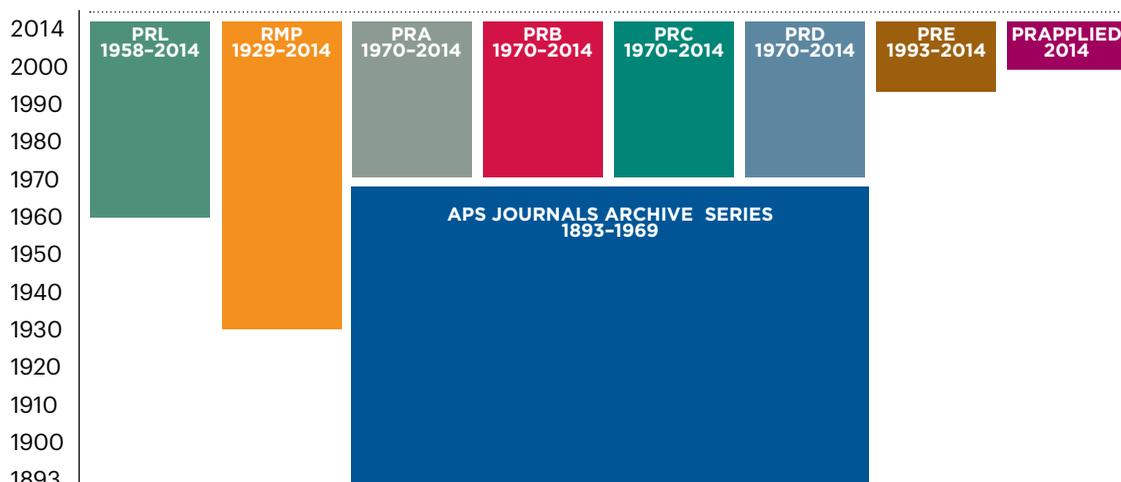
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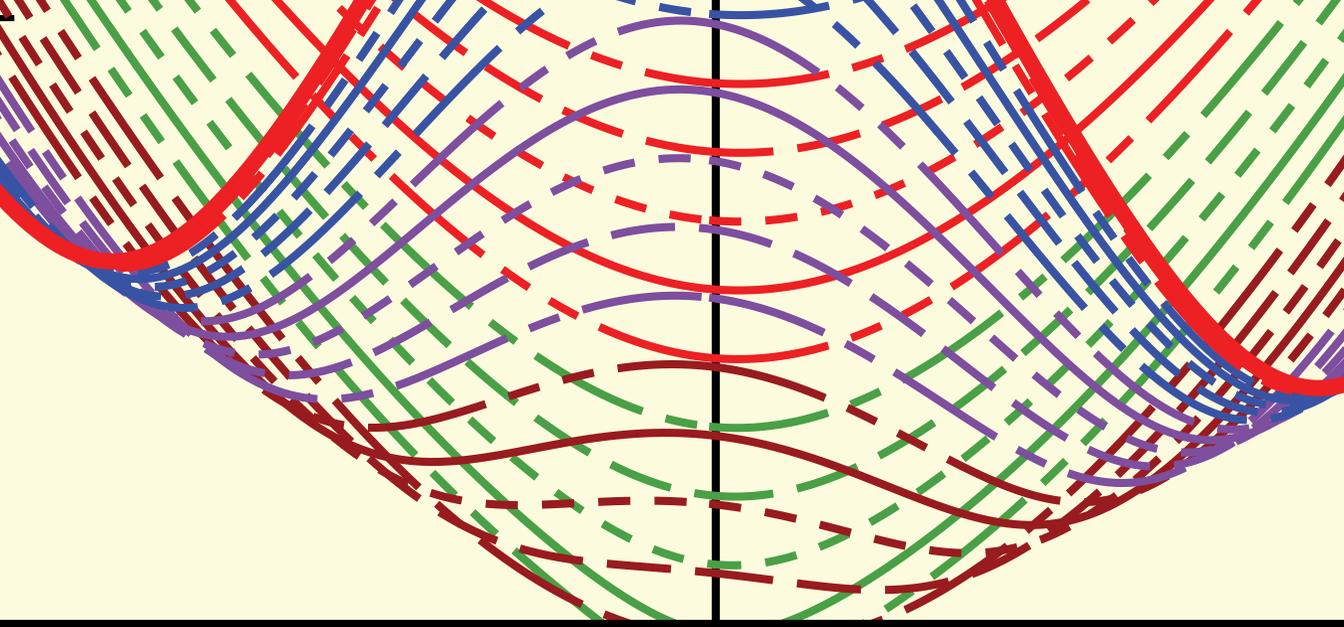
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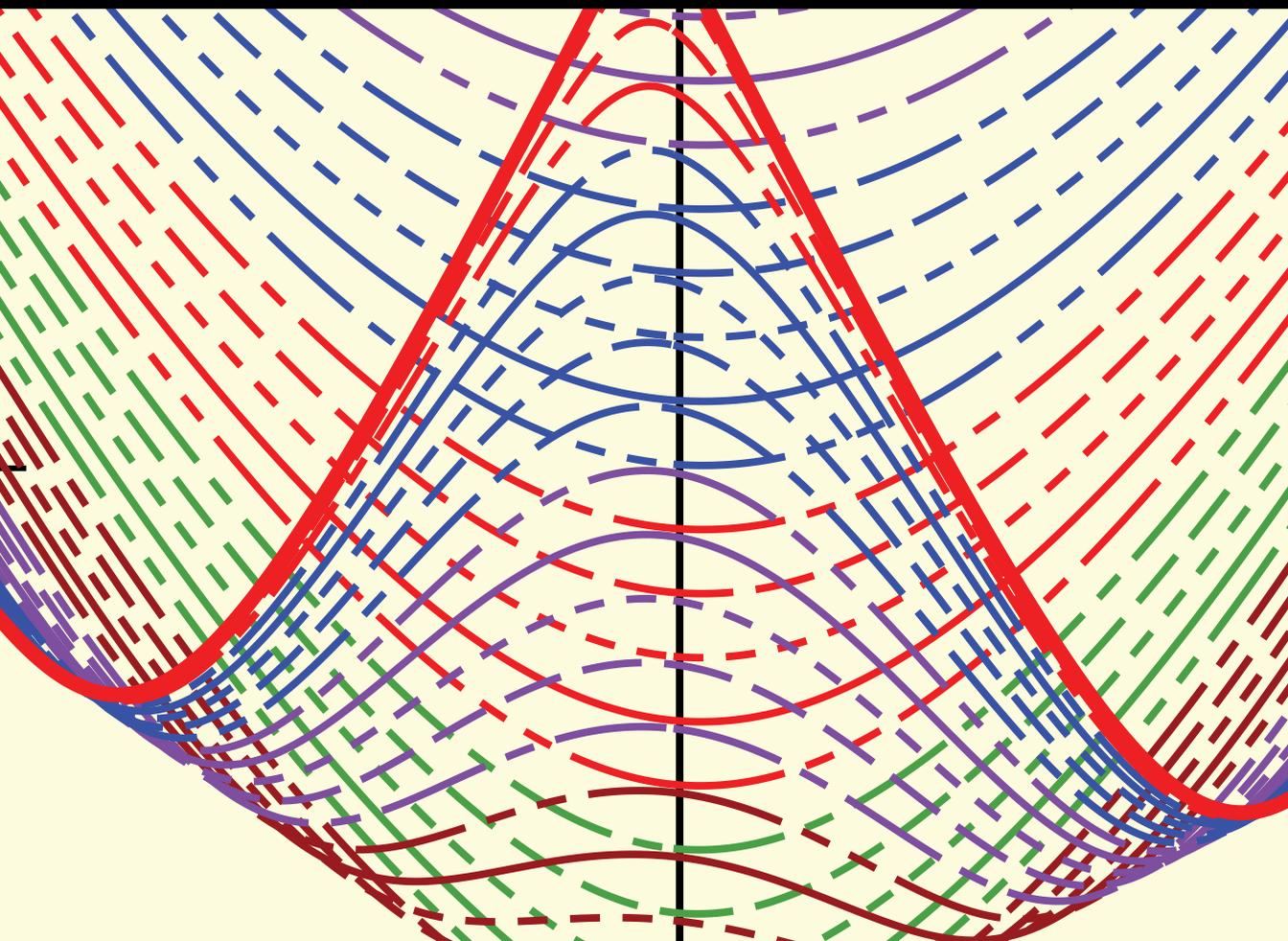
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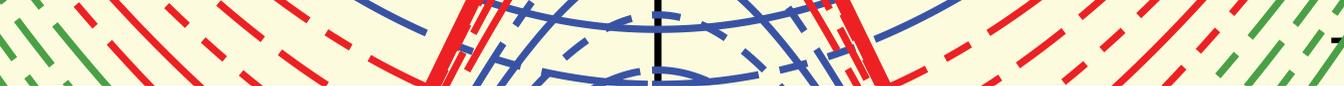
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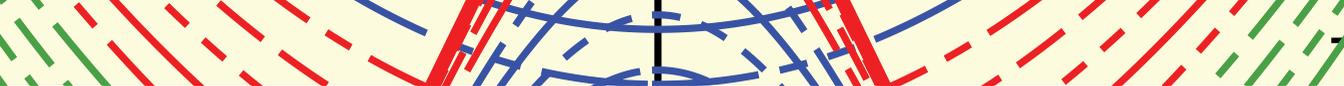


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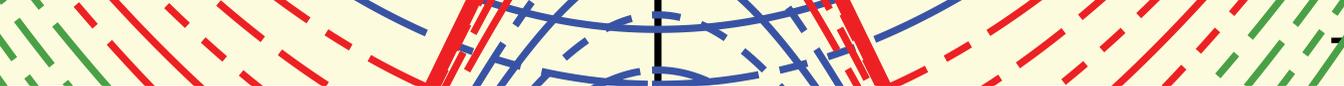
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