Comunicação Científica em Física

O papel da comunicação científica e as suas formas de apresentação

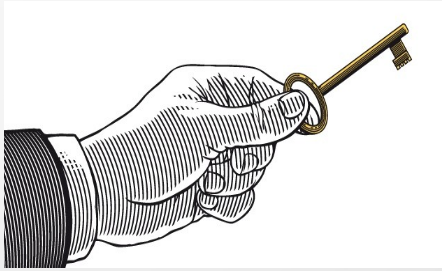
Aula 5

Divulgue o seu trabalho

Por que divulgar o seu trabalho?

1. A pesquisa é uma atividade coletiva.
2. A ciência avança em função deste trabalho coletivo.
3. Divulgar o seu trabalho permite que você seja conhecido.
4. Os pesquisadores são “medidos” a partir dos seus resultados.
5. As oportunidades de emprego surgem em função do seu trabalho

Science publishing: The golden club



Como divulgar?

Algumas formas de divulgar

1. Participe de eventos científicos, sempre que possível, para apresentar os resultados do seu trabalho.

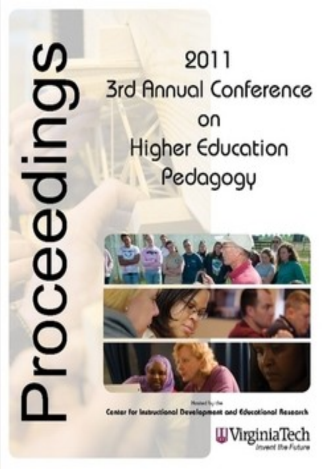
2. Escreva sobre o produto do seu trabalho, sempre que este mereça o esforço, na forma de um artigo científico, texto de divulgação científica, livro ou capítulo de livro, relatórios de pesquisa (*research reports*), etc.

3. Submeta seu artigo para um periódico científico ou algum meio de divulgação científica.

4. Publique seu livro através de uma editora ou disponibilize-o na internet.

Canais de divulgação

1. Jornais arbitrados (*peer-reviewed journals*)
2. Anais de conferências (*conference proceedings*)
3. Repositórios científicos (*open archives*)
4. Páginas na internet (*home pages*)



Sciences Po
Institutional Repository
Spire

Quem publica?

The 1% of scientific publishing (Erik Stokstad, 2014)

“Publishing is one of the most ballyhooed metrics of scientific careers, and every researcher hates to have a gap in that part of his or her CV. Here’s some consolation: A new study finds that very few scientists—fewer than 1%—manage to publish a paper every year.”

Estimates of the Continuously Publishing Core in the Scientific Workforce

John P. A. Ioannidis, Kevin W. Boyack, Richard Klavans (2014)

“Using the entire Scopus database, we estimated that there are 15,153,100 publishing scientists (distinct author identifiers) in the period 1996–2011. However, only 150,608 (<1%) of them have published something in each and every year in this 16-year period (uninterrupted, continuous presence [UCP] in the literature).”

Qual é o impacto da publicação?

Why some papers have long citation lifetimes

Helmut A. Abt. Nature 395, 756-757 (1998)

"When scientists publish their results they wonder whether their papers will be remembered for many years, as some are, or quickly forgotten. Here we show why the average lifetimes of papers in various scientific disciplines differ so much. We find that both the length of the paper and the speed of growth of the field are crucial in determining the duration and number of citations it receives."

1954

1959

Table 1 **Half-lives of papers in different scientific disciplines**

Journal (discipline)	Papers	Half-life (years)	Half-life corrected for growth (years)
Astrophys. J. (astronomy)	165	29.3	8.0
J. Am. Chem. Soc. (chemistry)	107	15.1	8.8
J. Geophys. Res. (geophysics)	111	6.4* 28.9†	5.5* 9.8†
Phys. Rev. (physics)	123	10.6	5.9
Science (general)	108	8.9	7.9
		Mean	7.6 ± 1.7

*Before 1970.
†After 1970.

Qual é o impacto da publicação?

Why some papers have long citation lifetimes

Helmut A. Abt. Nature 395, 756-757 (1998)

"All 165 papers published in the Astrophysical Journal (Astrophys. J.) in 1954 produced citations during the following 40 years that showed an average exponential decay with a half-life of 29.3 ± 1.7 years. Even after 40 years the citations per year were 39% of the initial numbers. Such a long lifetime seems surprising. Do other sciences also have such a long lifetime?"

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“A similar study was done on all 123 papers published in the January 1959 issues of the physics journal Physical Review (Phys. Rev.) and followed for 30 years in the Science Citation Index. Their citations showed a half-life of just 10.6 ± 0.4 years. Why is the average lifetime of papers in a leading physics journal so much shorter than for a leading astronomy journal?”

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“Several differences between astronomy and physics come to mind. Astronomy is primarily an observational science, whereas physics is an experimental science. Astronomical objects are mostly permanent relative to human lifetimes, so papers invite comparisons with earlier results. But the dominant factor seems to be that astronomy has been growing more rapidly than physics in recent decades.”

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"In the 40 years since 1954, Astrophys. J. grew from publishing 165 to 1,812 papers a year, a factor of 11.0. If there are 11 times as many papers being published now, it seems likely that an older paper has 11 times as much chance of being cited in a static field. Therefore, if the 1992 citations are reduced by that factor, the resulting half-life corrected to a static field becomes 8.0 years. Allowing for the growth in numbers of Phys. Rev. papers produces a similar corrected half-life of 5.9 years."

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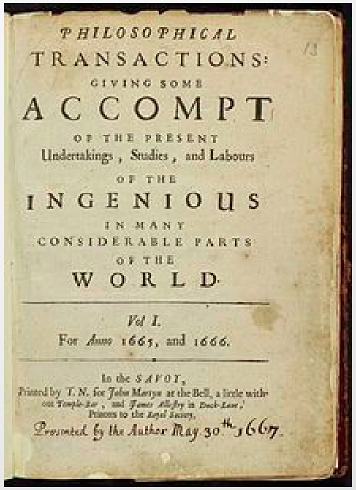
Onde publicar?

The Royal Society

- Philosophical Transactions of the Royal Society A (mathematics, physical sciences)
- Philosophical Transactions of the Royal Society B (biological sciences)
- Proceedings of the Royal Society A
- Proceedings of the Royal Society B
- Biology Letters
- Open Biology
- Royal Society Open Science
- Journal of the Royal Society Interface
- Interface Focus
- Notes and Records: the Royal Society journal of the history of science
- Biographical Memoirs of Fellows of the Royal Society

THE ROYAL SOCIETY

Philosophical Transactions of the Royal Society (1665)


PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD.

Vol I.
For Anno 1665, and 1666.

In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little without Temple-Bar, and James Allestry in Duck-Lane, Printers to the Royal Society.

Presented by the Author May 30th 1667.

Onde publicar?

The Royal Society

- Philosophical Transactions of the Royal Society A (mathematics, physical sciences)

PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A
MATHEMATICAL, PHYSICAL & ENGINEERING SCIENCES

Fator de Impacto (**JCR**)
2.441 (2015)

THE ROYAL SOCIETY

"Continuing its long history of influential scientific publishing, Philosophical Transactions A publishes high quality theme issues on topics of current importance and general interest within the physical, mathematical and engineering sciences, guest-edited by leading authorities and comprising new research, reviews and opinions from prominent researchers."

Onde publicar?

American Institute of Physics (AIP)

“The American Institute of Physics advances, promotes and serves the physical sciences for the benefit of humanity.”

“The American Institute of Physics (AIP) was founded in 1931 in response to funding problems brought on by the Great Depression.”

“AIP Member Societies cover a broad range of fields in the physical sciences and collectively represent more than 120,000 scientists, engineers, educators and students in the global physical sciences community.”

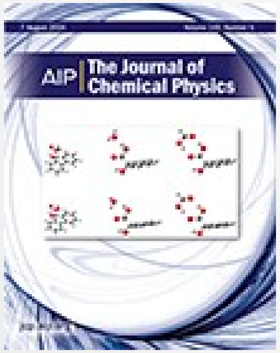
- Acoustical Society of America
- American Association of Physicists in Medicine
- American Association of Physics Teachers
- American Astronomical Society
- American Crystallographic Association
- American Meteorological Society
- American Physical Society
- American Vacuum Society
- Optical Society
- Society of Rheology

Onde publicar?

American Institute of Physics (AIP)

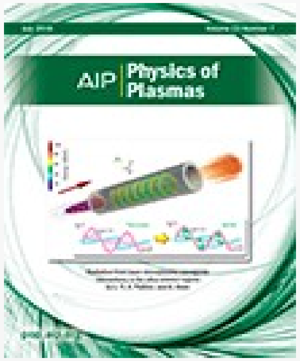
“AIP Publishing’s portfolio comprises 19 highly regarded, peer-reviewed journals, including the flagship journals Applied Physics Letters, Journal of Applied Physics, and The Journal of Chemical Physics, in addition to the AIP Conference Proceedings.”

JCR=2.894 (2015)



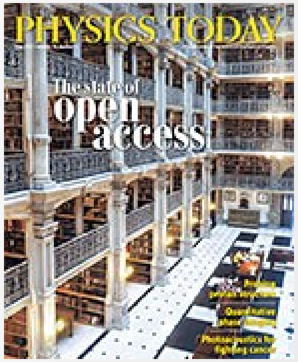
The Journal of Chemical Physics

JCR=2.207 (2015)



Physics of Plasmas

JCR=3.234 (2015)



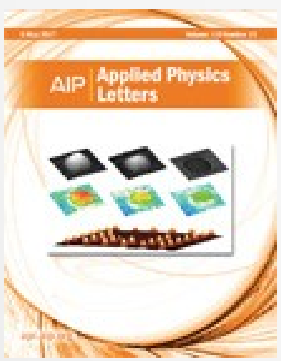
Physics Today

Onde publicar?

American Institute of Physics (AIP)

“AIP Publishing’s portfolio comprises 19 highly regarded, peer-reviewed journals, including the flagship journals Applied Physics Letters, Journal of Applied Physics, and The Journal of Chemical Physics, in addition to the AIP Conference Proceedings.”

JCR=3.142 (2015)

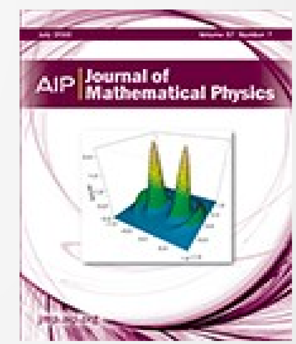


Applied Physics Letters

JCR=2.101 (2015)

Journal of Applied Physics

JCR=1.234 (2015)



Journal of Mathematical Physics

Onde publicar?

American Physical Society (APS)

“The American Physical Society strives to be the leading voice for physics and an authoritative source of physics information for the advancement of physics and the benefit of humanity.”

“The American Physical Society was founded on May 20, 1899, when 36 physicists gathered at Columbia University for that purpose. They proclaimed the mission of the new Society to be "to advance and diffuse the knowledge of physics", and in one way or another the APS has been at that task ever since.”

Onde publicar?

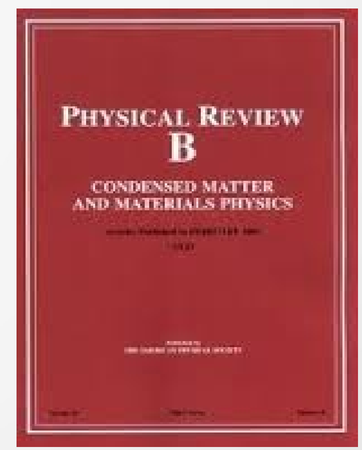
American Physical Society (APS)

The APS journal collection of 13 leading peer-reviewed research journals includes Physical Review Letters, Physical Review X, Physical Review, and Reviews of Modern Physics.

Physical Review Letters

JCR=7.645 (2015)

JCR=3.718 (2015)



Physical Review B

Onde publicar?

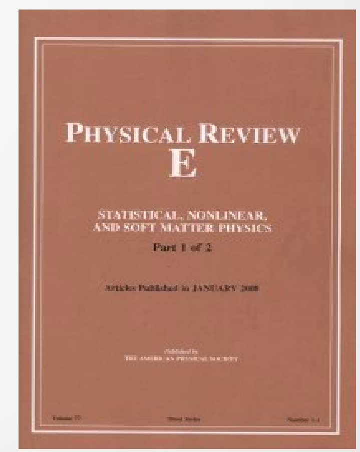
American Physical Society (APS)

The APS journal collection of 13 leading peer-reviewed research journals includes Physical Review Letters, Physical Review X, Physical Review, and Reviews of Modern Physics.

Physical Review D

JCR=4.506 (2015)

JCR=2.252 (2015)



Physical Review E

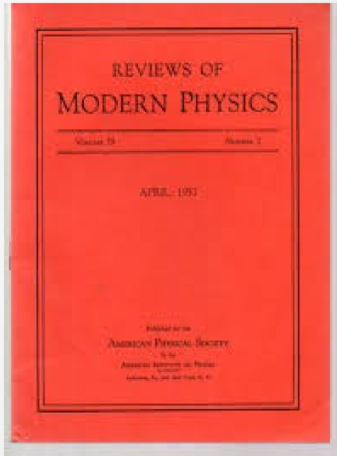
Onde publicar?

American Physical Society (APS)

The APS journal collection of 13 leading peer-reviewed research journals includes Physical Review Letters, Physical Review X, Physical Review, and Reviews of Modern Physics.

Physical Review

JCR=33.177 (2015)



Review of Modern Physics

Onde publicar?

Elsevier

"Over 2,500 digitized journals."

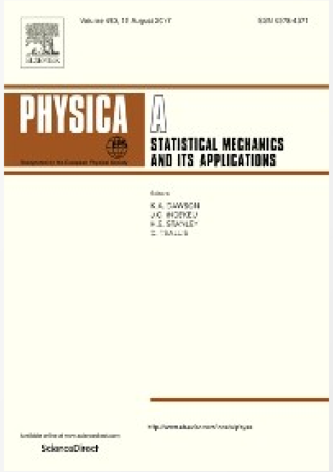
JCR=4.787 (2015)

Physics Letters B

JCR=1.677 (2015)

Physics Letters A

JCR=1.785 (2015)



Physica A: Statistical Mechanics and its Applications

Onde publicar?

Institute of Physics (IOP)

"The Institute of Physics is a leading scientific membership society working to advance physics for the benefit of all."

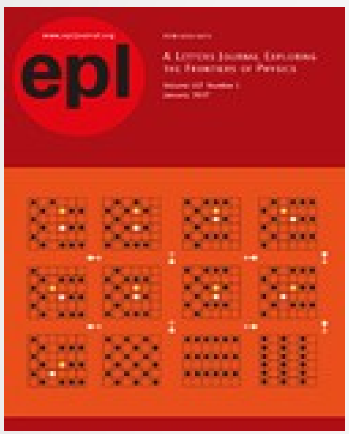
"Our purpose is to gather, inspire, guide, represent and celebrate all who share a passion for physics. And, in our role as a charity, we're here to ensure that physics delivers on its exceptional potential to benefit society."

"Browse more than 70 science journal titles."

Onde publicar?

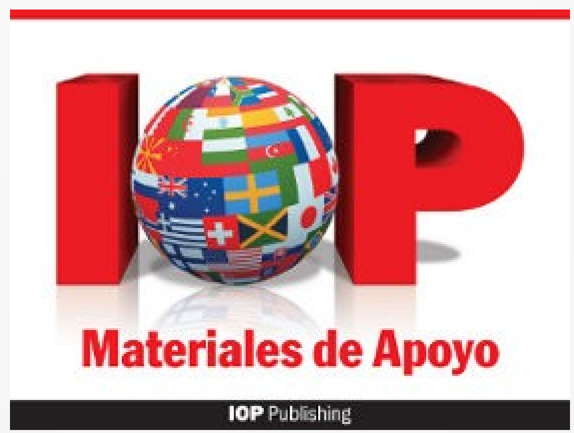
Institute of Physics (IOP)

IOP science

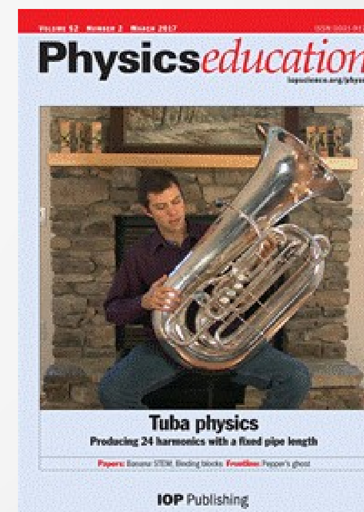


EPL (Europhysics Letters)

JCR=1.963 (2015)



IOP latinoamérica



Physics Education

JCR=0.37 (2015)

Onde publicar?

Brazilian Journal of Physics (BJP)

O Brazilian Journal of Physics, antes chamado de Revista Brasileira de Física, é publicado pela Sociedade Brasileira de Física (SBF) desde 1971.

JCR=1.042 (2015)

Onde publicar?

Revista Brasileira de Ensino de Física (RBEF)

A Revista Brasileira de Ensino de Física - RBEF - é uma publicação de acesso livre da Sociedade Brasileira de Física (SBF) voltada à melhoria do ensino de Física em todos os níveis de escolarização.

Onde publicar?

Caderno Brasileira de Ensino de Física

O Caderno Brasileiro de Ensino de Física é uma publicação quadrimestral, arbitrada, indexada, de circulação nacional, voltado prioritariamente para os cursos de formação de professores de Física.

O que publicar?

1. Artigos devem conter **novos resultados** e com validade científica comprovada em Física.

2. Artigos **abrem novas áreas** de pesquisa.

3. Artigos **abrem novos caminhos** de pesquisa dentro de uma área já estabelecida.

4. Artigos **solucionam problemas**, ou oferecem passos essenciais na direção desta solução.

5. Artigos **apresentam novas técnicas e metodologias**, capazes de desempenhar um papel essencial no futuro da pesquisa em Física.

Formatos de publicação

Letters

É a forma **mais conceituada** de publicação.

1. O artigo neste formado deve conter **resultados de impacto**.
2. Se espera que o artigo neste formado **abra novas áreas de pesquisa**.
3. Se espera que o artigo neste formado **proponha novos experimentos**.
4. Se espera que o artigo neste formado **proponha novos modelos teóricos**, passíveis de validação experimental.

PRL **112**, 123901 (2014) PHYSICAL REVIEW LETTERS week ending 28 MARCH 2014

Nonlinear Oscillations and Bifurcations in Silicon Photonic Microresonators

Daniel M. Abrams,[1,2,3,*] Alex Slawik,[1,†] and Kartik Srinivasan[4,‡]
[1] *Department of Engineering Sciences and Applied Mathematics, Northwestern University, Evanston, Illinois 60208, USA*
[2] *Northwestern Institute on Complex Systems, Northwestern University, Evanston, Illinois 60208, USA*
[3] *Department of Physics and Astronomy, Northwestern University, Evanston, Illinois 60208, USA*
[4] *Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, Maryland 20899, USA*
(Received 23 August 2013; published 24 March 2014)

Silicon microdisks are optical resonators that can exhibit surprising nonlinear behavior. We present a new analysis of the dynamics of these resonators elucidating the mathematical origin of spontaneous oscillations and deriving predictions for observed phenomena such as a frequency comb spectrum with MHz-scale repetition rate. We test predictions through laboratory experiment and numerical simulation.

DOI: 10.1103/PhysRevLett.112.123901 PACS numbers: 42.65.−k, 02.30.Hq, 05.45.−a

A remarkable self-oscillation [1–6] effect has recently been observed in silicon photonic microresonators [7–9], where excitation of the device with a continuous-wave input field can yield a periodically time-varying output field. Here, we present a new analysis of bifurcations and oscillations in silicon microresonators predicting the location and period of oscillation in parameter space.

Previous work has examined this phenomenon through direct numerical integration [8] and two-time-scale approximation [9]. By analyzing the structure of the coupled equations and the time scales over which different physical effects occur, we are able to reduce the dimensionality of the system and derive approximate closed-form expressions for characteristic physical phenomena. As one example, our analysis predicts that the intracavity field can exhibit a stable limit cycle manifested by a comb of equally spaced frequency components.

The physical insight derived from this approach may be valuable in efforts to make use of these devices as compact, optically driven oscillators. More generally, improved understanding of nonlinear phenomena in silicon resonators is important given their wide range of applications in photonics [10–13].

Physical system and model.—The physical system we study is a microdisk cavity [Fig. 1(a)] coupled to a single-mode optical waveguide. The waveguide is driven with a continuous-wave laser at a specified frequency detuning with respect to a microdisk optical mode. For simplicity, we neglect backscattering effects common in these types of resonators [14], and assume that the forward propagating mode of the waveguide excites only the clockwise traveling-wave mode of the microdisk [15], which, in turn, couples back out to the forward propagating mode. Our analysis neglects the Kerr nonlinearity, which has been the focus of considerable experimental [16] and theoretical work [17] in the context of parametric oscillation and frequency comb generation. It also neglects Raman scattering, and, instead, focuses on the role of two-photon absorption (TPA). As summarized in the Supplemental Material [18] and in Fig. 1(b), a strong enough intracavity field produces two-photon absorption in the silicon material, resulting in heating and thermo-optic dispersion, as well as the generation of free carriers, which cause additional absorption (free carrier absorption, FCA) and dispersion. The change in the optical loss rate and laser-cavity detuning caused by these effects means that the intracavity field $a(t)$ is coupled to the cavity temperature change $\Delta T(t)$ and the free carrier population $N(t)$.

The physical effects summarized above are described by the following set of coupled differential equations [8]:

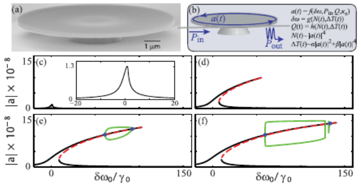


FIG. 1 (color online). (a) Scanning electron microscope image of a silicon microdisk resonator. (b) Schematic of the physical system, in which a continuous-wave input field results in a periodically oscillating output field. (c)–(f) Steady-state resonance curves for the intracavity field amplitude as a function of normalized detuning. (c) At low power, the curve is stable and single valued. (d) As power increases, nonlinear effects grow and the resonance curve bends over, leading to an unstable middle branch (dashed red). (e) Further increase in pump power leads to two simultaneous Hopf bifurcations (blue dots) and the birth of a stable limit cycle (envelope shown in green). (f) When the limit cycle grows sufficiently large, it collides with the middle branch and is destroyed via a homoclinic bifurcation (this collision occurs in four dimensions and is not visible in this projection). Pump powers: 0.71, 45, 86, and 120 μW.

0031-9007/14/112(12)/123901(5) 123901-1

Formatos de publicação

Letters

É a forma **mais conceituada** de publicação.

Neste formato, o número de páginas é limitado: **4 páginas**, na maior parte das revistas.

Deve conter:

a) Título

b) Resumo (*Abstract*)

c) Parte principal, **sem divisão** em seções

d) Referências

PRL **112,** 123901 (2014) PHYSICAL REVIEW LETTERS week ending 28 MARCH 2014

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The physical effects summarized above are described by the following set of coupled differential equations [8]:

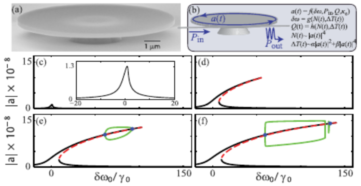

FIG. 1 (color online). (a) Scanning electron microscope image of a silicon microdisk resonator. (b) Schematic of the physical system, in which a continuous-wave input field results in a periodically oscillating output field. (c)–(f) Steady-state resonance curves for the intracavity field amplitude as a function of normalized detuning. (c) At low power, the curve is stable and single valued. (d) As power increases, nonlinear effects grow and the resonance curve bends over, leading to an unstable middle branch (dashed red). (e) Further increase in pump power leads to two simultaneous Hopf bifurcations (blue dots) and the birth of a stable limit cycle (envelope shown in green). (f) When the limit cycle grows sufficiently large, it collides with the middle branch and is destroyed via a homoclinic bifurcation (this collision occurs in four dimensions and is not visible in this projection). Pump powers: 0.71, 45, 86, and 120 μW.

0031-9007/14/112(12)/123901(5) 123901-1

Formatos de publicação

Artigos regulares

É a forma **mais comum** de publicação.

Embora **apresente resultados com validade científica**, não contém os parâmetros para ser classificado como *letter*.

Neste formato, o **número de páginas não é limitado**. O limite é dado pela revista para onde o artigo foi submetido.

PHYSICAL REVIEW C **95**, 034303 (2017)

Hybrid configuration mixing model for odd nuclei

G. Colò,* P. F. Bortignon, and G. Bocchi
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(Received 23 December 2016; published 6 March 2017)

In this work, we introduce a new approach which is meant to be a first step towards complete self-consistent low-lying spectroscopy of odd nuclei. So far, we essentially limit ourselves to the description of a double-magic core plus an extra nucleon. The model does not contain any free adjustable parameter and is instead based on a Hartree-Fock (HF) description of the particle states in the core, together with self-consistent random-phase approximation (RPA) calculations for the core excitations. We include both collective and noncollective excitations, with proper care of the corrections due to the overlap between them (i.e., due to the nonorthonormality of the basis). As a consequence, with respect to traditional particle-vibration coupling calculations in which one can only address single-nucleon states and particle-vibration multiplets, we can also describe states of shell-model types like 2 particle–1 hole. We will report results for ^{49}Ca and ^{133}Sb and discuss future perspectives.

DOI: 10.1103/PhysRevC.95.034303

I. INTRODUCTION

Finding a successful microscopic description for the low-lying spectra of odd nuclei is, to a large extent, an open question. A few of them can be reasonably described in terms of an even-even core plus an extra particle, as is well known from the early days of the introduction of the shell model in nuclear physics; at the same time, state-of-the-art applications of self-consistent mean field (SCMF) or density functional theory (DFT) often fail in reproducing the ordering of low-lying levels in the odd system (see, e.g., Ref. [1] and references therein). The detailed spectroscopy of odd nuclei can also be studied within theories that go beyond the simple one-quasiparticle picture. The generator coordinate method (GCM) and multireference DFT (MR-DFT), which include the mixing of various DFT configurations and hence the restoration of broken symmetries, have recently been applied to odd nuclei [2]: At present, these calculations are still very demanding from the computational point of view and thus have limited applicability. Large-scale shell-model calculations are certainly appropriate for spectroscopy and their success in light nuclei is well documented [3]. Nonetheless, they become increasingly difficult when the mass number increases. In our paper, this will become evident as we will mention shell-model calculations around ^{48}Ca and point out that the same calculations are not feasible around ^{132}Sn or for even larger nuclei.

All this points clearly to the need for complementary theoretical approaches that can be transferable among different mass regions and provide sound and transparent results. Particle-vibration coupling (PVC) models are based on the simple yet effective idea that particles (or quasiparticles) outside a spherical core are mainly affected by the low-lying core excitations, so that a proper description of the odd nucleus should result from the treatment of the coupling between particles and core vibrations. This picture has been introduced quite early in nuclear structure theory, both by the Copenhagen [4] and Dubna [5] schools. Most applications have been purely phenomenological (see Ref. [6] for a recent example). In our work, we start instead from a microscopic Hamiltonian of the Skyrme type. There is continuous interest in models based on the interplay between fermionic and bosonic degrees of freedom in nuclei: A novel method has been recently introduced in Ref. [7].

Some of us have already studied single-particle states around a magic core by using PVC based on the Skyrme Hamiltonian [8–10], while similar calculations in the relativistic mean field (RMF) framework have been carried out in Refs. [11,12]. However, the low-lying spectra of odd nuclei are characterized by the simultaneous presence of states having quite different physical nature. The aim of our work is making steps towards complete spectroscopy, rather than focusing only on states with a specific character, as we explain below.

Some of the states in the odd system have indeed mainly particle-like character and accordingly possess large spectroscopic factors associated with stripping and pickup reactions.[1] Some other states may instead have the largest component which is associated with the coupling of a particle with a core vibration. We take as a signature of such character the fact that the reduced decay transition probability from these states to the odd nucleus ground state is similar to the reduced transition probability of the core vibration. In fact, in the weak coupling scheme these reduced transition probabilities are equal, that is,

$$B(E\lambda,[j' \otimes J = \lambda]_j \to j') = B(E\lambda, J = \lambda \to 0), \quad (1)$$

where j' and J label, schematically, the particle state and the core vibration coupled to angular momentum j (cf. Eqs. (6.467) and (6.86) of Ref. [4]). Moreover, there might be

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[1] We are well aware of the problems connected with a clean definition of spectroscopic factors. However, such problems do not prevent use of spectroscopic factors for a qualitative indication about the nature of observed states discussed here.

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Formatos de publicação

Artigos regulares

É a forma mais comum de publicação.

Deve conter (no mínimo):

a) Título

b) Resumo (*Abstract*)

c) Introdução

d) Parte principal, **dividida** em seções

e) Conclusão

f) Referências

PHYSICAL REVIEW C **95**, 034303 (2017)

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- Mesma estrutura de *letter* ou artigo regular

RAPID COMMUNICATIONS

PHYSICAL REVIEW E **90**, 030701(R) (2014)

Anomalous diffusion of self-propelled particles in directed random environments

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(Received 28 November 2013; revised manuscript received 22 June 2014; published 15 September 2014)

We theoretically study the transport properties of self-propelled particles on complex structures, such as motor proteins on filament networks. A general master equation formalism is developed to investigate the persistent motion of individual random walkers, which enables us to identify the contributions of key parameters: the motor processivity, and the anisotropy and heterogeneity of the underlying network. We prove the existence of different dynamical regimes of anomalous motion, and that the crossover times between these regimes as well as the asymptotic diffusion coefficient can be increased by several orders of magnitude within biologically relevant control parameter ranges. In terms of motion in continuous space, the interplay between stepping strategy and persistency of the walker is established as a source of anomalous diffusion at short and intermediate time scales.

DOI: 10.1103/PhysRevE.90.030701 PACS number(s): 87.16.Ka, 05.40.−a, 87.16.Nn, 87.16.Uv

Anomalous transport of self-propelled particles in biological environments has received much recent attention [1]. Of particular interest is the active motion of motor proteins

viscoelasticity or traps in the environment, and the resulting motion is commonly characterized by comparing it to different mathematical models, e.g., *fractional Brownian motion* [17],

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- Formato das revistas da AIP
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THE JOURNAL OF CHEMICAL PHYSICS **146**, 181101 (2017)

Communication: Heterogeneous water dynamics on a clathrate hydrate lattice detected by multidimensional oxygen nuclear magnetic resonance

Mischa Adjei-Acheamfour, Michael Storek, and Roland Böhmer
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(Received 16 March 2017; accepted 24 April 2017; published online 8 May 2017)

Previous deuteron nuclear magnetic resonance studies revealed conflicting evidence regarding the possible motional heterogeneity of the water dynamics on the hydrate lattice of an ice-like crystal. Using oxygen-17 nuclei as a sensitive quadrupolar probe, the reorientational two-time correlation function displays a clear nonexponentiality. To check whether this dispersive behavior is a consequence of dynamic heterogeneity or rather of an intrinsic nonexponentiality, a multidimensional, four-time magnetic resonance experiment was devised that is generally applicable to strongly quadrupolarly perturbed half-integer nuclei such as oxygen-17. Measurements of an appropriate four-time function demonstrate that it is possible to select a subensemble of slow water molecules. Its mean time scale is compared to theoretical predictions and evidence for significant motional heterogeneity is found. *Published by AIP Publishing.* [http://dx.doi.org/10.1063/1.4983043]

Dynamics in liquids and glasses is characterized by a ubiquitous nonexponential response to external perturbations.[1] The quenched or self-induced disorder prevalent in glasses

clathrate hydrate, however, the existence of heterogeneous dynamics was cast in doubt[10] and remained unresolved using deuteron NMR.[11] By contrast, a recent oxygen NMR study

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Comments

- Publicação com **crítica ou correção** de artigos de outros autores, previamente publicados.

PHYSICAL REVIEW E **94**, 036101 (2016)

Comment on "Nonlocal quartic interactions and universality classes in perovskite manganites"

H. W. Diehl
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(Received 5 February 2016; published 6 September 2016)

In a recent paper [Phys. Rev. E **92**, 012123 (2015)], a modified d-dimensional Φ^4 model was investigated that differs from the standard one in that the Φ^4 term was replaced by a nonlocal one with a potential $u(\boldsymbol{x}-\boldsymbol{x}')$ that depends on a parameter σ and decays exponentially as $|\boldsymbol{x}-\boldsymbol{x}'|\to\infty$ on a scale $|m|^{-1}<\infty$. The authors claim the upper critical dimension of this model to be $d_\sigma = 4+2\sigma$. Performing a one-loop calculation, they arrive at expansions in powers of $\epsilon_\sigma = d_\sigma - d$ for critical exponents such as η and related ones to $O(\epsilon_\sigma)$ whose $O(\epsilon_\sigma)$ coefficients depend on σ and the ratio $w = m^2/\Lambda^2$, where Λ is the uv cutoff. It is shown that these claims are unfounded and based on misjudgments and an ill-conceived renormalization-group calculation.

DOI: 10.1103/PhysRevE.94.036101

The authors of [1] investigated an n-component Φ^4 model in d dimensions with a nonlocal quartic term whose Hamiltonian is given by

problems: For $\sigma > 0$, the asymptotic critical behavior of the model in $4 < d < d_\sigma$ dimensions would be inconsistent with mean-field theory. Likewise, irrespective of whether $\sigma > 0$

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PHYSICAL REVIEW D **95**, 049902(E) (2017)

Erratum: I-Love-Q relations for gravastars and the approach to the black-hole limit [Phys. Rev. D 92, 124030 (2015)]

singular

Paolo Pani

(Received 21 January 2017; published 9 February 2017)

We point out two mistakes which affect the computation of the moment of inertia and of the tidal Love number in the original paper. Both mistakes have been corrected in Ref. [1] and the correct tidal Love number agrees with the recent computation of Ref. [2].

DOI: 10.1103/PhysRevD.95.049902

(1) *Moment of inertia.*—As noted in Ref. [1], the moment of inertia of a thin-shell gravastar with zero surface density is $I = MR^2$, and not $I = R^3/2$ as stated in the original paper. Although these quantities agree in the black-hole limit, $R \to 2M$, they generically differ from each other.

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Errata

- Publicação que **corrige** artigos previamente publicados, por iniciativa do editor.

PHYSICAL REVIEW E **95**, 029901(E) (2017)

Publisher's Note: Refractory period of an excitable semiconductor laser with optical injection [Phys. Rev. E 95, 012214 (2017)]

B. Garbin, A. Dolcemascolo, F. Prati, J. Javaloyes, G. Tissoni, and S. Barland

(Received 3 February 2017; published 10 February 2017)

DOI: 10.1103/PhysRevE.95.029901

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4. Um ***template*** para a redação do seu artigo.