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December 2025**



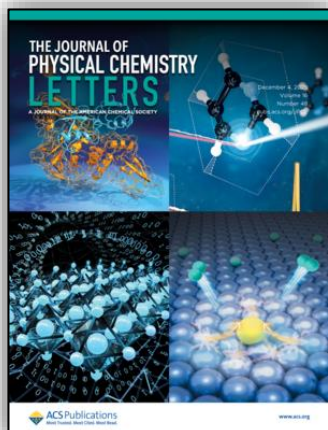
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BIOLOGY

Journal Articles



Author(s): ADHAV, VISHAL A.; BHATTI, RUSHIK; SINGH, ASHI; Pradhan, Amit K.; SHELKE, SANKET S.; Thomas, Sajesh P.; SAIKRISHNAN, KAYARAT

Title: Role of a Tunable σ -Hole-Mediated Chalcogen Bond in the Substrate Specificity of Methionyl-tRNA Synthetase

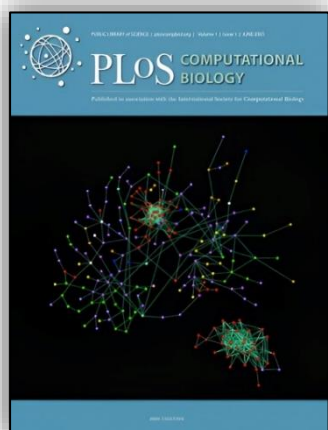
Citation: Journal of Physical Chemistry Letters, 16(48), 12428-12436.

Publisher: American Chemical Society

URI: <https://doi.org/10.1021/acs.jpcllett.5c02853>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10603>

Publication Date: 2025-12



Author(s): ATHREYA, GAURAV S.; Gokhale, Chaitanya S.; Verma, Prateek

Title: Coexistence rules for small, antagonistically interacting microbial communities

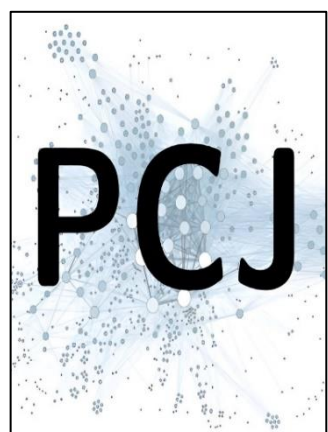
Citation: PLOS Computational Biology, 21(12), e1013763.

Publisher: PLOS

URI: <https://doi.org/10.1371/journal.pcbi.1013763>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10628>

Publication Date: 2025-12



Author(s): DESHPANDE, JHELAM N.; Fronhofer, Emanuel A

Title: A gene-regulatory network model for density-dependent and sex-biased dispersal evolution during range expansions

Citation: Peer Community Journal.

Publisher: Centre Mersenne

URI: <https://doi.org/10.24072/pcjournal.626>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10589>

Publication Date: 2025-11

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Author(s): Dutta, Priyanka; Maiti, Ipshita; Mondal, Krishna Chandra; GHOSE, AURNAB; Chauhan, Radha; Maiti, Sankar

Title: Kaptin Functions as a Barbed-End Binding Protein to Control Actin Filament Dynamics

Citation: Journal of Molecular Biology, 438(02).

Publisher: Elsevier B.V.

URI: <https://doi.org/10.1016/j.jmb.2025.169554>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10605>

Publication Date: 2026-01



Author(s): Hsiao, Li-Ching; PURI, SARITA; Sriramoju, Manoj Kumar; Wang, Yong-Sheng; Lee, Tian-Neng; Wang, Lily Hui-Ching; Danny Hsu, Shang-Te

Title: Characterization of BRCA1-Associated Protein-1 (BAP1) Aggregation Properties Induced by Cancer-Associated Mutations

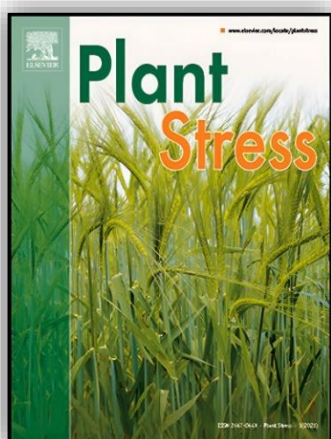
Citation: ChemBioChem, 26(23).

Publisher: Wiley

URI: <https://doi.org/10.1002/cbic.202500372>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10612>

Publication Date: 2025-11



Author(s): KHAN, MOHD ISHFAQ; BHIDE, AMEY JAYANT; BANERJEE, ANJAN K.

Title: Diversification of MSL proteins in extant land plants with intrinsically disordered regions depict their functional enhancement in stress response

Citation: Plant Stress, 19, 101163.

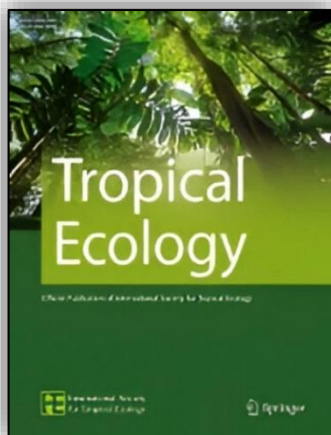
Publisher: Elsevier B.V.

URI: <https://doi.org/10.1016/j.stress.2025.101163>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10598>

Publication Date: 2026-01

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Author(s): MUNGEE, MANSI; Pandit, Rohan; ATHREYA, RAMANA

Title: Strong seasonal and elevational dynamics in community assembly mechanisms of tropical montane birds in the Eastern Himalayas

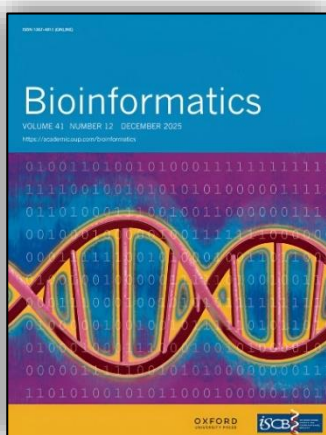
Citation: Tropical Ecology, 66, 559-572.

Publisher: Springer Nature

URI: <https://doi.org/10.1007/s42965-025-00397-6>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10632>

Publication Date: 2025-12



Author(s): SUBRAMANIAN, VIJAY; Appadurai, Rajeswari; Venkatesh, Harikrishnan; Sekhar, Ashok; Srivastava, Anand; Srivastava A.

Title: Morpheus: a fragment-based algorithm to predict fold-switching behaviour in proteins across proteomes

Citation: Bioinformatics, 41(12).

Publisher: Oxford University Press

URI: <https://doi.org/10.1093/bioinformatics/btaf635>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10627>

Publication Date: 2025-12

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CHEMISTRY

Journal Articles



Author(s): ANAND KUMAR, T.; CHAKRAPANI, HARINATH et al.

Title: A Mycobacteria-Specific Prodrug to Overcome Phenotypic AMR in Mycobacterium tuberculosis

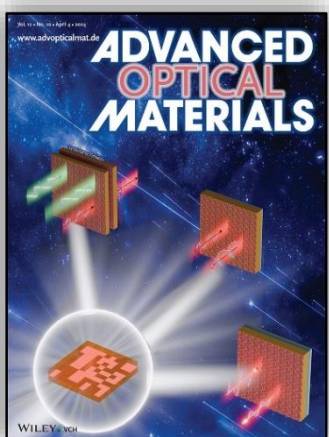
Citation: Journal of Medicinal Chemistry, 68(23), 24935-24952.

Publisher: American Chemical Society

URI: <https://doi.org/10.1021/acs.jmedchem.5c01848>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10626>

Publication Date: 2025-12



Author(s): CHATTERJEE, ABHIJIT; HAZRA, PARTHA et al.

Title: Role of Excited-State Structural Reorganization in Achieving Enhanced TADF in Molecular Aggregates for Efficient Cyan-Green and Yellow OLEDs

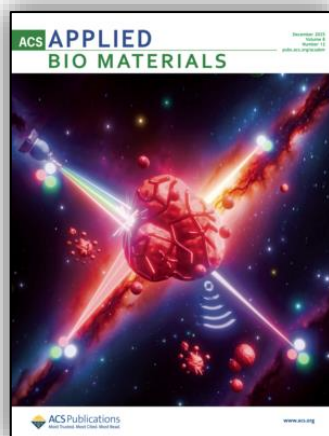
Citation: Advanced Optical Materials.

Publisher: Wiley

URI: <https://doi.org/10.1002/adom.202503397>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10621>

Publication Date: 2025-12



Author(s): DAS, UJJAL; GHOSH, ANIMESH

Title: Controlling the Electrochemical Metallization in a Nanocellulose-Based Resistive Memory Device through Interface Engineering

Citation: ACS Applied Bio Materials, 8(12), 10758-10764.

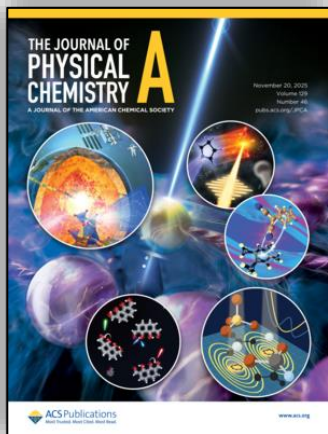
Publisher: American Chemical Society

URI: <https://doi.org/10.1021/acsabm.5c01425>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10625>

Publication Date: 2025-12

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Author(s): GUDEM, MAHESH; HAZRA, ANIRBAN

Title: Ab Initio Study of Photodissociation and Isomerization Pathways on the Singlet and Triplet Manifolds of 1-Nitropropene

Citation: Journal of Physical Chemistry A, 129(46), 10632-10646.

Publisher: American Chemical Society

URI: <https://doi.org/10.1021/acs.jpca.5c05393>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10593>

Publication Date: 2025-11



Author(s): GURIA, SAIKAT; DEY, SAYAN; CHATTOPADHYAY, BUDDHADEB

Title: Iridium-Catalyzed Para-Selective C—H Borylation via Attractive Weak Interactions

Citation: Chemistry - A European Journal, 129(46), 10632-10646.

Publisher: American Chemical Society

URI: <https://doi.org/10.1002/chem.202503229>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10631>

Publication Date: 2025-12



Author(s): JANGID, PANKAJ; CHAUDHURY, SRABANTI

Title: Stochastic dynamics of nanoparticle catalysis: a discrete-state perspective

Citation: Materials Horizons

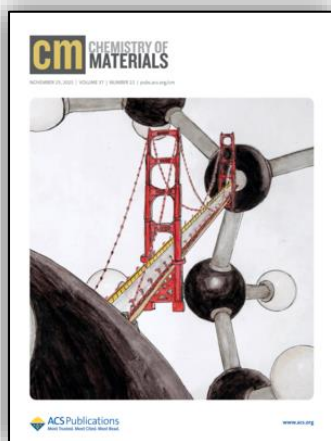
Publisher: Royal Society of Chemistry

URI: <https://doi.org/10.1039/D5MH01692D>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10630>

Publication Date: 2025-12

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Author(s): JOSE, THERESE MARIYA; HASSAN, NAHID; Ananthram, Kekkar Subray; KALYANI, MINI; Tarafder, Kartick; BALLAV, NIRMALYA

Title: Synergistic Photoconductivity and Ultralow Thermal Conductivity upon Stabilizing Iron(III)-tris(2,2'-bipyridine) in a Two-Dimensional Haloargentate Network

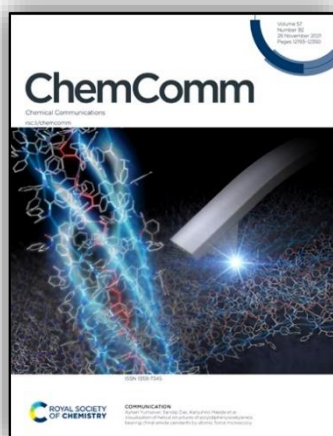
Citation: Chemistry of Materials, 37(22), 9212-9220.

Publisher: American Chemical Society

URI: <https://doi.org/10.1021/acs.chemmater.5c02071>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10592>

Publication Date: 2025-11



Author(s): KAULAGE, SANDEEP H.; SHAH, BRIJ KUMAR; PANDAY, RISHUKUMAR; Sharma, Himanshu; Vanka, Kumar; KHAN, SHABANA

Title: Silylene-copper(i) catalysis: regioselective protoboration of terminal alkynes

Citation: Chemical Communications, 61(19), 19652-19655., 61(19), 19652-19655.

Publisher: Royal Society of Chemistry

URI: <https://doi.org/10.1039/D5CC06125C>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10613>

Publication Date: 2025-12



Author(s): Makwana, Shivangi; KUMAR, ABHISHEK; Rajani, Dhanji P.; Shah, Umang; Patel, Hitesh; Prajapati, Apurva; Kumari, Premlata

Title: Molecular modelling and structure-activity relationship of pyrrolo[2,3-d]pyrimidine derivatives as potent DNA gyrase B inhibitors

Citation: Journal of Biomolecular Structure and Dynamics

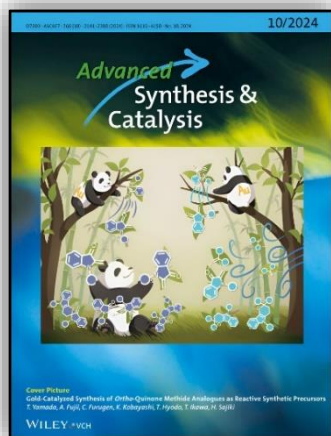
Publisher: Taylor & Francis

URI: <https://doi.org/10.1080/07391102.2025.2597995>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10633>

Publication Date: 2025-12

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Author(s): Pradhan, Manoj; Mandal, Adarsha; TIWARI, PRABHAKAR; Borthakur, Ishani; Borpuzari, Manash Protim; Kundu, Sabuj

Title: Hydricity Modulated Methylation of Indoles and Nitriles Using Methanol: Selective Synthesis of C3-Methylated Indoles, Bisindolylmethanes, and α -Methylated Nitriles

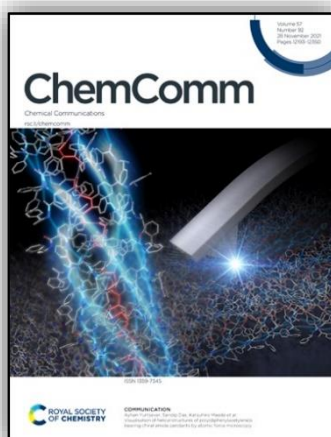
Citation: Advanced Synthesis & Catalysis.

Publisher: Wiley

URI: <https://doi.org/10.1002/adsc.70224>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10620>

Publication Date: 2025-12



Author(s): SHIVPUJE, UMESH; AHMAD, MANZOOR; ROY, NAVEEN J.; TALUKDAR, PINAKI

Title: Ligand-responsive ON-OFF anion transport using copper-caged acylhydrazone transporters

Citation: Chemical Communications, 61(100), 19929-19932.

Publisher: Royal Society of Chemistry

URI: <https://doi.org/10.1039/D5CC04105H>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10600>

Publication Date: 2025-11

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EARTH AND CLIMATE SCIENCE

Book Chapter



Author(s): MONTEIRO, JOY MERWIN; SHAH, HARDIK

Title: Extreme Heat in South Asia: Meteorology, Prediction, and Impacts

Citation: Climate Change and Public Health: Governance and Challenges

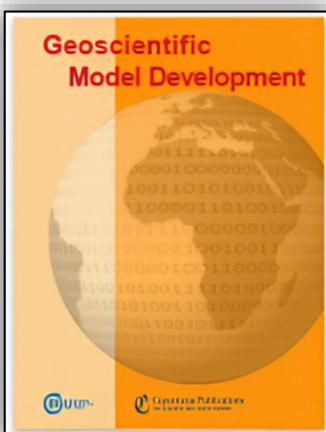
Publisher: Springer Nature

URI: https://doi.org/10.1007/978-981-95-0895-2_4

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10635>

Publication Date: 2025-11

Journal Articles



Author(s): Degen, Denise; KUMAR, AJAY; Scheck-Wenderoth, Magdalena; Cacace, Mauro

Title: Exploiting physics-based machine learning to quantify geodynamic effects - insights from the Alpine region

Citation: Geoscientific Model Development, 18(22), 9219-9236.

Publisher: European Geosciences Union

URI: <https://doi.org/10.5194/gmd-18-9219-2025>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10606>

Publication Date: 2025-11



Author(s): Krishna, K. S.; Sreejith, K. M.; ISMAIEL, M.

Title: Did the Kerguelen hotspot move or remain stable during the formation of the Ninetyeast Ridge?

Citation: Current Science, 129(11), 961-965.

Publisher: Indian Academy of Sciences

URI: <https://www.currentscience.ac.in/Volumes/129/11/0961.pdf>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10604>

Publication Date: 2025-12

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HUMANITIES AND SOCIAL SCIENCES

Journal Articles



Author(s): LAKRAS, TEJASHREE

Title: Architectural Heritage as Filming Location: View From Literature

Citation: Tekton, 11(02), 24-52.

Publisher: Mahatma Education Society

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10584>

Publication Date: 2025-12



Author(s): Nerlekar, Ashish N.; PATIL, DIGVIJAY

Title: Utilizing traditional literature to triangulate the ecological history of a tropical savanna

Citation: People and Nature.

Publisher: Wiley

URI: <https://doi.org/10.1002/pan3.70201>

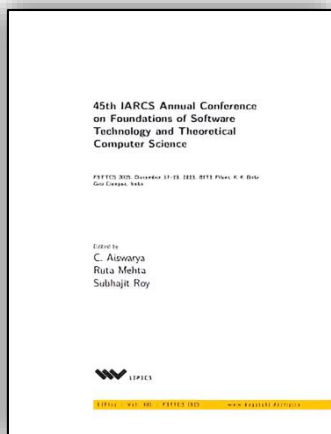
DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10554>

Publication Date: 2025-11

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MATHEMATICS

Conference Papers



Author(s): Mathur, Yashaswini; TALE, PRAFULLKUMAR

Title: A Finer View of the Parameterized Landscape of Labeled Graph Contractions

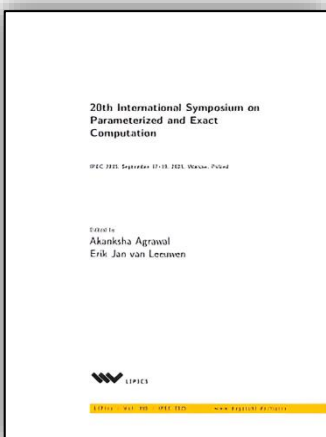
Citation: 45th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2025), 43.

Publisher: Dagstuhl Publishing

URI: <https://doi.org/10.4230/LIPIcs.FSTTCS.2025.43>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10569>

Publication Date: 2025-12



Author(s): TALE, PRAFULLKUMAR

Title: Geodetic Set on Graphs of Constant Pathwidth and Feedback Vertex Set Number

Citation: 20th International Symposium on Parameterized and Exact Computation (IPEC 2025)

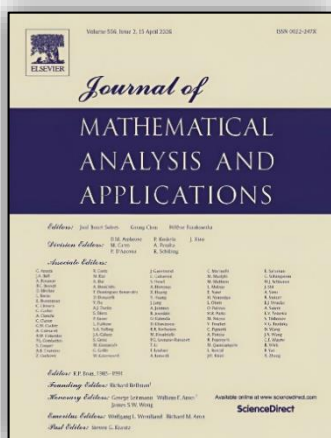
Publisher: Dagstuhl Publishing

URI: <https://doi.org/10.4230/LIPIcs.IPEC.2025.28>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10571>

Publication Date: 2025-12

Journal Articles



Author(s): BISWAS, ANUP

Title: The Pohozaev identity for mixed local-nonlocal operators

Citation: Journal of Mathematical Analysis and Applications, 557(01), 130270,

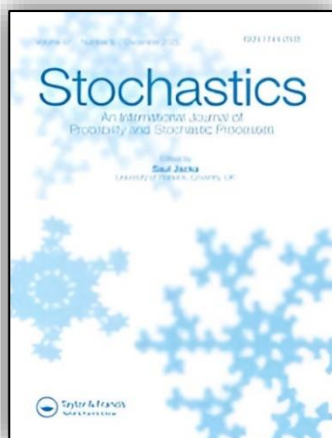
Publisher: Elsevier B.V.

URI: <https://doi.org/10.1016/j.jmaa.2025.130270>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10590>

Publication Date: 2026-05

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Author(s): GOSWAMI, ANINDYA; YADAV, RAVISHANKAR KAPILDEV

Title: On merging of stochastic system of semi-Markov dynamics

Citation: Stochastics, 1-17.

Publisher: Taylor & Francis

URI: <https://doi.org/10.1080/17442508.2025.2603360>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10622>

Publication Date: 2025-12

Episciences

Discrete Mathematics
& Theoretical
Computer Science

Author(s): Krithika, R.; Sharma, Roohani; TALE, PRAFULLKUMAR

Title: The Complexity of Contracting Bipartite Graphs into Small Cycles

Citation: Discrete Mathematics & Theoretical Computer Science, 27(3).

Publisher: Episciences

URI: <https://doi.org/10.46298/dmtcs.14658>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10602>

Publication Date: 2025-12



Author(s): SHAH, VARUN; SPALLONE, STEVEN

Title: On the divisibility of degrees of representations of Lie groups

Citation: Journal of Algebraic Combinatorics, 63(01).

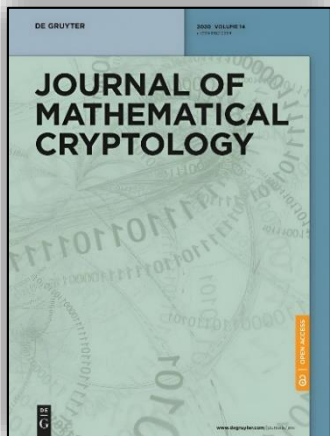
Publisher: Springer Nature

URI: <https://doi.org/10.1007/s10801-025-01481-9>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10623>

Publication Date: 2025-12

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Author(s): Srinivasan, Adarsh; MAHALANOBIS, AYAN

Title: A McEliece cryptosystem using permutation codes

Citation: Journal of Mathematical Cryptology, 19(1).

Publisher: De Gruyter

URI: <https://doi.org/10.1515/jmc-2024-0029>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10588>

Publication Date: 2025-11

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PHYSICS

Conference Paper



Author(s): KUSHWAHA, PRAGYA; CHIKKADI, VIJAYAKUMAR

Title: Anomalous Dynamics of Colloids and Their Cluster Formation in Active Liquids

Citation: EPJ Web of Conferences, 340, 12007.

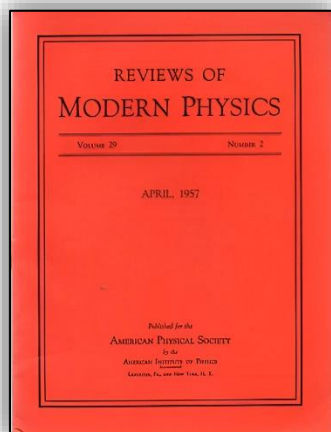
Publisher: EDP Sciences

URI: <https://doi.org/10.1051/epjconf/202534012007>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10608>

Publication Date: 2025-12

Journal Articles



Author(s): ADHIKARI, SUSMITA; BANERJEE, ARKA et al.

Title: Astrophysical tests of dark matter self-interactions

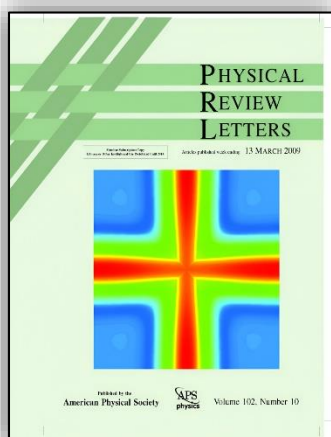
Citation: Reviews of Modern Physics, 97, 045004.

Publisher: American Physical Society

URI: <https://doi.org/10.1103/m2vm-59y3>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10617>

Publication Date: 2025-12



Author(s): CHATTERJEE, ARIJIT; Karthik, H. S.; MAHESH, T. S.; Usha Devi, A. R.

Title: Extreme Violations of Leggett-Garg Inequalities for a System Evolving under Superposition of Unitaries

Citation: Physical Review Letters, 135, 220202.

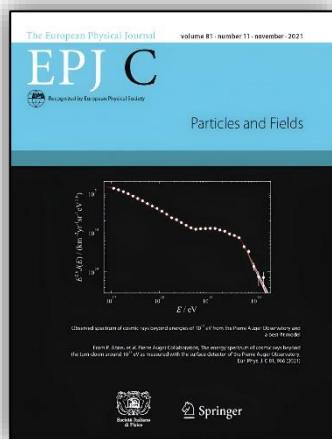
Publisher: American Physical Society

URI: <https://doi.org/10.1103/vydp-9qqq>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10591>

Publication Date: 2025-11

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Author(s): CMS Collaboration; Chekhovsky, V.; ACHARYA, S.; ALPANA, A.; DUBE, SOURABH; GOMBER, B.; HAZARIKA, P.; KANSAL, B.; LAHA, A.; SAHU, B.; SHARMA, SEEMA; VAISH, K. Y. et al.

Title: Development of systematic uncertainty-aware neural network trainings for binned-likelihood analyses at the LHC

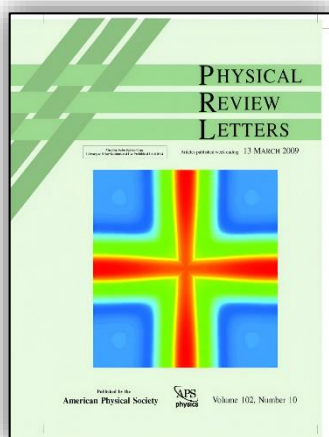
Citation: European Physical Journal C, 85, 1360.

Publisher: Springer Nature

URI: <https://doi.org/10.1140/epjc/s10052-025-14713-w>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10616>

Publication Date: 2025-11



Author(s): CMS Collaboration; Hayrapetyan, A.; ACHARYA, S.; ALPANA, A.; DUBE, SOURABH; GOMBER, B.; HAZARIKA, P.; KANSAL, B.; LAHA, A.; SAHU, B.; SHARMA, SEEMA; VAISH, K. Y. et al.

Title: Search for New Physics in Jet Multiplicity Patterns of Multilepton Events at $\sqrt{s} = 13$ TeV

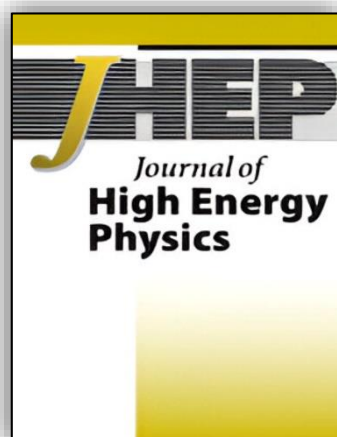
Citation: Physical Review Letters, 135, 231804.

Publisher: American Physical Society

URI: <https://doi.org/10.1103/51fw-klz3>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10614>

Publication Date: 2025-12



Author(s): CMS Collaboration; Hayrapetyan, A.; ALPANA, A.; DUBE, SOURABH; HAZARIKA, P.; KANSAL, B.; LAHA, A.; SHARMA, R.; SHARMA, SEEMA; VAISH, K. Y. et al.

Title: A method for correcting the substructure of multiprong jets using the Lund jet plane

Citation: Journal of High Energy Physics, 2025(11), 38.

Publisher: Springer Nature

URI: [https://doi.org/10.1007/JHEP11\(2025\)038](https://doi.org/10.1007/JHEP11(2025)038)

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10629>

Publication Date: 2025-11

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Author(s): Devi, Reshma; BALASUBRAMANIAN, AVANEESH; Butler, Keith T.; Gopalakrishnan, Sai Gautam

Title: A literature-derived dataset of migration barriers for quantifying ionic transport in battery materials

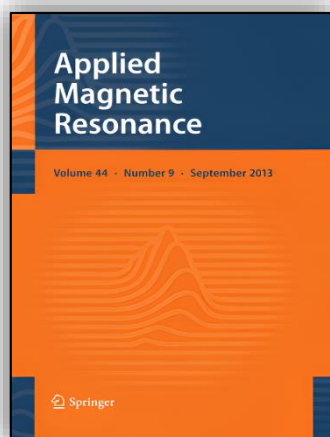
Citation: Scientific Data, 12, 1922.

Publisher: Springer Nature

URI: <https://doi.org/10.1038/s41597-025-06196-x>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10615>

Publication Date: 2025-12



Author(s): Dubey, Pralekh; Kumar, Shashank; Singh, Chinmaya; Naliyapara, Jemish; Poojar, Monish A.; HARI KRISHNAN, K. B.; Poonia, Anshul; Peddibhotla, Phani

Title: Magnetic Field Orientation Dependence of Continuous-Wave Optically Detected Magnetic Resonance with Nitrogen-Vacancy Ensembles

Citation: Applied Magnetic Resonance, 57(01).

Publisher: Springer Nature

URI: <https://doi.org/10.1007/s00723-025-01824-6>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10624>

Publication Date: 2026-01



Author(s): MAURYA, S. SAGAR; SUNIL, JOEL M.; BHARTIYA, MONU; DUTTA, PRANAB; MANGAONKAR, JAY; Sawant, Rahul; RAPOL, UMAKANT D.

Title: Evaporative cooling by pulse width modulation (PWM) of optical dipole traps

Citation: Physical Review Research, 7, 043050.

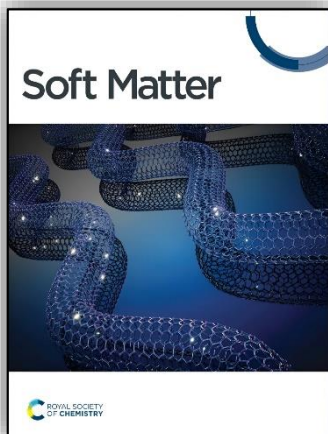
Publisher: American Physical Society

URI: <https://doi.org/10.1103/fbx6-8l7n>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10594>

Publication Date: 2025-10

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Author(s): PANDEY, SUMANT; KUMAR, G. V. PAVAN

Title: Optical tweezers assisted coupling of nematic droplets to gold nanoparticle cluster: Effect on whispering gallery modes

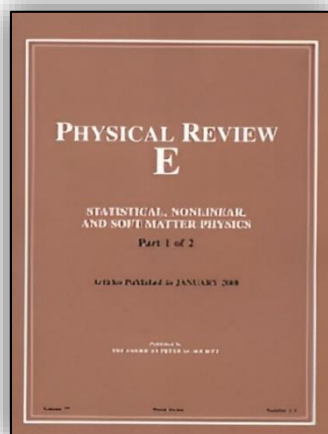
Citation: Soft Matter.

Publisher: Royal Society of Chemistry

URI: <https://doi.org/10.1039/D5SM00926J>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10601>

Publication Date: 2025-12



Author(s): ROYCHOUDHURY, KINGKINI; PANDE, SHREERANG; SHASHANK, INDRAKANTY S.; MITRA, DEBARSHI; CHATTERJI, APRATIM

Title: Entropic organization of topologically modified ring polymers in spherical confinement

Citation: Physical Review E, 112, 055409.

Publisher: American Physical Society

URI: <https://doi.org/10.1103/mdmh-p275>

DR URI: <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/10599>

Publication Date: 2025-11

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