# Geza Zsigmond

## List of Publications by Year in descending order



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|---|---|---|---|
| 100 papers | 2,227 citations | 236925 25 h-index | 243625 44 g-index |
| 101 all docs | 101 docs citations | 101 times ranked | 1454 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Revised experimental upper limit on the electric dipole moment of the neutron. Physical Review D, 2015, 92, . | 4.7 | 285 |
| 2 | Measurement of the Permanent Electric Dipole Moment of the Neutron. Physical Review Letters, 2020, 124, 081803. | 7.8 | 263 |
| 3 | Search for Axionlike Dark Matter through Nuclear Spin Precession in Electric and Magnetic Fields. Physical Review X, 2017, 7, . | 8.9 | 129 |
| 4 | Direct Experimental Limit on Neutronâ€“Mirror-Neutron Oscillations. Physical Review Letters, 2007, 99, 161603. | 7.8 | 74 |
| 5 | Test of Lorentz Invariance with Spin Precession of Ultracold Neutrons. Physical Review Letters, 2009, 103, 081602. | 7.8 | 63 |
| 6 | The PSI ultra-cold neutron source. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 611, 272-275. | 1.6 | 58 |
| 7 | The search for the neutron electric dipole moment at the Paul Scherrer Institute. Physics Procedia, 2011, 17, 159-167. | 1.2 | 56 |
| 8 | Neutron to mirror-neutron oscillations in the presence of mirror magnetic fields. Physical Review D, 2009, 80, . | 4.7 | 52 |
| 9 | Dynamic stabilization of the magnetic field surrounding the neutron electric dipole moment spectrometer at the Paul Scherrer Institute. Journal of Applied Physics, 2014, 116, . | 2.5 | 48 |
| 10 | Monte Carlo simulations of neutron scattering instruments by VITESS: Virtual instrumentation tool for ESS. Neutron News, 2002, 13, 11-14. | 0.2 | 47 |
| 11 | Comparison of ultracold neutron sources for fundamental physics measurements. Physical Review C, 2017, 95, . | 2.9 | 39 |
| 12 | <title>Neutron instrument simulation and optimization using the software package VITESS</title>. , 2004, , . | | 36 |
| 13 | Highly stable atomic vector magnetometer based on free spin precession. Optics Express, 2015, 23, 22108. | 3.4 | 34 |
| 14 | VITESS: Virtual instrumentation tool for pulsed and continuous sources. Neutron News, 2000, 11, 25-28. | 0.2 | 33 |
| 15 | A survey of simulations of complex neutronic systems by VITESS. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2004, 529, 218-222. | 1.6 | 30 |
| 16 | Cold Neutron Energy Dependent Production of Ultracold Neutrons in Solid Deuterium. Physical Review Letters, 2007, 99, 262502. | 7.8 | 30 |
| 17 | Towards a new measurement of the neutron electric dipole moment. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 611, 133-136. | 1.6 | 30 |
| 18 | A measurement of the neutron to 199 Hg magnetic moment ratio. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2014, 739, 128-132. | 4.1 | 30 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Tailored instrumentation for long-pulse neutron spallation sources. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2008, 589, 34-46. | 1.6 | 29 |
| 20 | Constraining interactions mediated by axion-like particles with ultracold neutrons. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2015, 745, 58-63. | 4.1 | 29 |
| 21 | A search for neutron to mirror-neutron oscillations using the nEDM apparatus at PSI. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2021, 812, 135993. | 4.1 | 29 |
| 22 | Diamondlike carbon can replace beryllium in physics with ultracold neutrons. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2006, 642, 24-27. | 4.1 | 27 |
| 23 | Storage of ultracold neutrons in high resistivity, non-magnetic materials with high Fermi potential. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2008, 597, 222-226. | 1.6 | 27 |
| 24 | The design of the n2EDM experiment. European Physical Journal C, 2021, 81, 512. | 3.9 | 27 |
| 25 | The high-resolution neutron spin-echo spectrometer for the SNS with Ï„â©¾1Î¼s. Physica B: Condensed Matter, 2004, 350, 147-150. | 2.7 | 26 |
| 26 | A device for simultaneous spin analysis of ultracold neutrons. European Physical Journal A, 2015, 51, 1. | 2.5 | 26 |
| 27 | Neutron velocity distribution from a superthermal solid 2H2 ultracold neutron source. European Physical Journal A, 2008, 37, 9. | 2.5 | 24 |
| 28 | Virtual experiments: the ultimate aim of neutron ray-tracing simulations. Journal of Neutron Research, 2008, 16, 97-111. | 1.1 | 24 |
| 29 | New constraints on Lorentz invariance violation from the neutron electric dipole moment. Europhysics Letters, 2010, 92, 51001. | 2.0 | 24 |
| 30 | Magnetic-field uniformity in neutron electric-dipole-moment experiments. Physical Review A, 2019, 99, . | 2.5 | 24 |
| 31 | Loss and spinflip probabilities for ultracold neutrons interacting with diamondlike carbon and beryllium surfaces. Physical Review C, 2007, 76, . | 2.9 | 22 |
| 32 | Measurement of the Fermi potential of diamond-like carbon and other materials. Nuclear Instruments & Methods in Physics Research B, 2007, 260, 647-656. | 1.4 | 22 |
| 33 | Additional results from the first dedicated search for neutronâ€“mirror neutron oscillations. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 611, 141-143. | 1.6 | 20 |
| 34 | Observation of Gravitationally Induced Vertical Striation of Polarized Ultracold Neutrons by Spin-Echo Spectroscopy. Physical Review Letters, 2015, 115, 162502. | 7.8 | 19 |
| 35 | Ultracold neutron detection with 6Li-doped glass scintillators. European Physical Journal A, 2016, 52, 1. | 2.5 | 19 |
| 36 | Optically pumped Cs magnetometers enabling a high-sensitivity search for the neutron electric dipole moment. Physical Review A, 2020, 101, . | 2.5 | 19 |

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|---|---|---|---|
| 37 | Gravitational depolarization of ultracold neutrons: Comparison with data. Physical Review D, 2015, 92, . | 4.7 | 18 |
| 38 | Measurement of a false electric dipole moment signal from 199Hg atoms exposed to an inhomogeneous magnetic field. European Physical Journal D, 2015, 69, 1. | 1.3 | 18 |
| 39 | Solid deuterium surface degradation at ultracold neutron sources. European Physical Journal A, 2018, 54, 1. | 2.5 | 17 |
| 40 | The n2EDM experiment at the Paul Scherrer Institute. EPJ Web of Conferences, 2019, 219, 02002. | 0.3 | 17 |
| 41 | Neutron optics of the PSI ultracold-neutron source: characterization and simulation. European Physical Journal A, 2020, 56, 1. | 2.5 | 17 |
| 42 | Monte carlo code comparisons for a model instrument. Neutron News, 2002, 13, 24-29. | 0.2 | 16 |
| 43 | High-resolution roton spectra around the superfluid transition temperature in liquid 4He. Physica B: Condensed Matter, 2007, 388, 43-48. | 2.7 | 15 |
| 44 | Neutron production and thermal moderation at the PSI UCN source. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2015, 777, 20-27. | 1.6 | 15 |
| 45 | Losses and depolarization of ultracold neutrons on neutron guide and storage materials. Physical Review C, 2017, 96, . | 2.9 | 15 |
| 46 | The MCUCN simulation code for ultracold neutron physics. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2018, 881, 16-26. | 1.6 | 15 |
| 47 | Monte Carlo simulation of crystal monochromators/analysers â€“ Applications for the crystal-analyser neutron spectrometer IRIS. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 457, 299-308. | 1.6 | 14 |
| 48 | Investigation of solid , and for ultracold neutron production. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 611, 252-255. | 1.6 | 14 |
| 49 | Diffuse reflection of ultracold neutrons from low-roughness surfaces. European Physical Journal A, 2010, 44, 23-29. | 2.5 | 14 |
| 50 | Transmission of very slow neutrons through material foils and its influence on the design of ultracold neutron sources. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 608, 144-151. | 1.6 | 13 |
| 51 | A prestorage method to measure neutron transmission of ultracold neutron guides. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 807, 30-40. | 1.6 | 13 |
| 52 | Improved Search for Neutron to Mirror-Neutron Oscillations in the Presence of Mirror Magnetic Fields with a Dedicated Apparatus at the PSI UCN Source. Symmetry, 2022, 14, 503. | 2.2 | 13 |
| 53 | Demonstration of sensitivity increase in mercury free-spin-precession magnetometers due to laser-based readout for neutron electric dipole moment searches. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2018, 896, 129-138. | 1.6 | 12 |
| 54 | New aspects for high-intensity neutron beam production. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 608, 434-439. | 1.6 | 11 |

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| 55 | nEDM experiment at PSI: Data-taking strategy and sensitivity of the dataset. EPJ Web of Conferences, 2019, 219, 02001. | 0.3 | 11 |
| 56 | Ultracold Neutronsâ€"Physics and Production. Nuclear Physics News, 2010, 20, 17-23. | 0.4 | 10 |
| 57 | Production of ultracold neutrons from cryogenic 2 H 2 , O 2 , and C 2 H 4 converters. Europhysics Letters, 2011, 95, 12001. | 2.0 | 10 |
| 58 | Transmission of ultra-cold neutrons through guides coated with materials of high optical potential. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2014, 741, 71-77. | 1.6 | 10 |
| 59 | Monte-Carlo simulations for instrumentation at pulsed and continuous sources. Physica B: Condensed Matter, 2000, 276-278, 71-72. | 2.7 | 9 |
| 60 | Surface characterization of diamond-like carbon for ultracold neutron storage. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2008, 587, 82-88. | 1.6 | 9 |
| 61 | An improved measurement of the electric dipole moment of the neutron. Nuclear Physics A, 2010, 844, 47c-52c. | 1.5 | 8 |
| 62 | MC calculations for the nEDM experiment systematics. Physics Procedia, 2011, 17, 259-267. | 1.2 | 7 |
| 63 | An ultracold neutron storage bottle for UCN density measurements. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 830, 449-453. | 1.6 | 7 |
| 64 | Copper coated carbon fiber reinforced plastics for high and ultra high vacuum applications. Vacuum, 2014, 101, 212-216. | 3.5 | 6 |
| 65 | Active compensation of magnetic field distortions based on vector spherical harmonics field description. AIP Advances, 2017, 7, . | 1.3 | 6 |
| 66 | Using Fermi choppers to shape the neutron pulse. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2006, 557, 580-584. | 1.6 | 5 |
| 67 | Monte Carlo simulations for the development of polarized neutron instrumentation: An overview. Physica B: Condensed Matter, 2007, 397, 115-119. | 2.7 | 5 |
| 68 | First observation of trapped high-field seeking ultracold neutron spin states. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2011, 704, 456-460. | 4.1 | 5 |
| 69 | A Search for Neutron to Mirror Neutron Oscillation Using Neutron Electric Dipole Moment Measurements. Symmetry, 2022, 14, 487. | 2.2 | 5 |
| 70 | Ultracold neutron storage and transport at the PSI UCN source. European Physical Journal A, 2022, 58, . | 2.5 | 5 |
| 71 | The role of reactive diffusion in the growth kinetics of the icosahedral quasicrystalline Al4Mn phase: case of sequentially deposited thin films. Thin Solid Films, 1995, 271, 26-34. | 1.8 | 4 |
| 72 | Simulation of the time-of-flight-backscattering neutron spectrometer IRIS The Monte Carlo data reduction technique. Physica B: Condensed Matter, 2000, 276-278, 106-107. | 2.7 | 4 |

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| 73 | Analytical calculations and Monte-Carlo simulations of a high-resolution backscattering spectrometer for the long wavelength target station at the Spallation neutron source. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2002, 491, 216-225. | 1.6 | 4 |
| 74 | Monte Carlo simulation of single-crystal spectroscopy and diffraction at spallation sources. Applied Physics A: Materials Science and Processing, 2002, 74, s224-s225. | 2.3 | 4 |
| 75 | Simulations of a convergent bender as neutron polariser for NSE spectrometers. Physica B: Condensed Matter, 2003, 335, 270-273. | 2.7 | 4 |
| 76 | A low-pass velocity filter for ultracold neutrons. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2012, 675, 103-111. | 1.6 | 4 |
| 77 | An endoscopic detector for ultracold neutrons. European Physical Journal A, 2013, 49, 1. | 2.5 | 4 |
| 78 | Statistical sensitivity of the nEDM apparatus at PSI to n â˜' nâ€² oscillations. EPJ Web of Conferences, 2019, 219, 07001. | 0.3 | 4 |
| 79 | Optimisation of guide exits by combining MC simulations and optimising routines. Physica B: Condensed Matter, 2004, 350, E687-E689. | 2.7 | 3 |
| 80 | A numerical analysis of time focusing of crystal analyzer spectrometers on pulsed sources. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 550, 359-378. | 1.6 | 3 |
| 81 | Testing isotropy of the universe using the Ramsey resonance technique on ultracold neutron spins. Physica B: Condensed Matter, 2011, 406, 2365-2369. | 2.7 | 3 |
| 82 | Experimental study of 199Hg spin anti-relaxation coatings. Applied Physics B: Lasers and Optics, 2014, 115, 257-262. | 2.2 | 3 |
| 83 | Monte Carlo simulation of a pulsed-source time-focused crystal analyzer spectrometer. , 2002, , . | | 2 |
| 84 | Benchmark simulation of a Fermi-chopper instrument. Physica B: Condensed Matter, 2004, 350, E717-E719. | 2.7 | 2 |
| 85 | Monte-Carlo simulation of phase space transformation of ultra-cold neutrons. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2008, 586, 110-115. | 1.6 | 2 |
| 86 | A compact, large-diameter adiabatic spinflipper for ultracold neutrons. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 608, 132-138. | 1.6 | 2 |
| 87 | Johnson-Nyquist noise effects in neutron electric-dipole-moment experiments. Physical Review A, 2021, 103, . | 2.5 | 2 |
| 88 | Indirect searches for dark matter with the nEDM spectrometer. SciPost Physics Proceedings, 2021, , . | 0.4 | 2 |
| 89 | Monte Carlo simulation of polarising cavities. Physica B: Condensed Matter, 2003, 335, 266-269. | 2.7 | 1 |
| 90 | Inelastic neutron scattering facilities at the Budapest Neutron Center. Physica Status Solidi C: Current Topics in Solid State Physics, 2004, 1, 3182-3185. | 0.8 | 1 |

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| 91 | Aspects of Neutron Spin-echo Spectrometer Operation on a Pulsed Source. Journal of Neutron Research, 2005, 13, 63-66. | 1.1 | 1 |
| 92 | Monte Carlo simulations for instrumentation at SINQ. Physica B: Condensed Matter, 2006, 385-386, 1346-1348. | 2.7 | 1 |
| 93 | An efficient gravitational spectrometer for ultracold neutrons. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 624, 168-172. | 1.6 | 1 |
| 94 | The ultracold neutron source at the Paul Scherrer Institute â€“ Performance and status. Journal of Neutron Research, 2019, 20, 83-86. | 1.1 | 1 |
| 95 | Oscillating ultra-cold neutron spectrometer. EPJ Web of Conferences, 2019, 219, 10007. | 0.3 | 1 |
| 96 | Data blinding for the nEDM experiment at PSI. European Physical Journal A, 2021, 57, 152. | 2.5 | 1 |
| 97 | VITESS and other software packages discussed at meeting. Neutron News, 2002, 13, 8-8. | 0.2 | 0 |
| 98 | Time-focused crystal analyzer spectrometer. Physical Chemistry Chemical Physics, 2005, 7, 1250. | 2.8 | 0 |
| 99 | Novel neutron guides. Journal of Neutron Research, 2008, 16, 75-80. | 1.1 | 0 |
| 100 | High Intensity Monochromatic Pulsed Neutron Beams from UCN Up-scattering. Neutron News, 2010, 21, 26-29. | 0.2 | 0 |