

# Maria Grazia Pia

## List of Publications by Year in descending order

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158  
papers

26,954  
citations

136885

32  
h-index

36008

97  
g-index

158  
all docs

158  
docs citations

158  
times ranked

18668  
citing authors

#	ARTICLE	IF	CITATIONS
1	Geant4 a simulation toolkit. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2003, 506, 250-303.	0.7	17,893
2	Geant4 developments and applications. IEEE Transactions on Nuclear Science, 2006, 53, 270-278.	1.2	4,869
3	The BABAR detector. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2002, 479, 1-116.	0.7	1,216
4	The Physics of the B Factories. European Physical Journal C, 2014, 74, 1.	1.4	292
5	Comparison of Geant4 electromagnetic physics models against the NIST reference data. IEEE Transactions on Nuclear Science, 2005, 52, 910-918.	1.2	160
6	The BB detector: Upgrades, operation and performance. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 729, 615-701.	0.7	148
7	Observation of the $1P1$ state of charmonium. Physical Review Letters, 1992, 69, 2337-2340.	2.9	133
8	Measurement of CP-Violating Asymmetries in $B^0$ Decays to $CP$ Eigenstates. Physical Review Letters, 2001, 86, 2515-2522.	2.9	125
9	Proton electromagnetic form factors in the timelike region from 8.9 to 13.0 GeV <sup>2</sup> . Physical Review Letters, 1993, 70, 1212-1215.	2.9	113
10	A goodness-of-fit statistical toolkit. IEEE Transactions on Nuclear Science, 2004, 51, 2056-2063.	1.2	88
11	Geant4 Physics Processes for Microdosimetry Simulation: Design Foundation and Implementation of the First Set of Models. IEEE Transactions on Nuclear Science, 2007, 54, 2619-2628.	1.2	86
12	Search for the $1P1$ charmonium state in annihilations at the CERN intersecting storage rings. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1986, 171, 135-141.	1.5	72
13	Study of the $\chi_{c1}$ and $\chi_{c2}$ charmonium states formed in $p$ annihilations. Nuclear Physics B, 1992, 373, 35-54.	0.9	66
14	Implementation of a new Monte Carlo-GEANT4 Simulation tool for the development of a proton therapy beam line and verification of the related dose distributions. IEEE Transactions on Nuclear Science, 2005, 52, 262-265.	1.2	66
15	Validation Test of Geant4 Simulation of Electron Backscattering. IEEE Transactions on Nuclear Science, 2015, 62, 451-479.	1.2	63
16	Measurement of the $J/\psi$ and $\psi(2S)$ resonance parameters in $p\bar{p}$ annihilation. Physical Review D, 1993, 47, 772-783.	1.6	60
17	Measurement of branching fractions for exclusive $B$ decays to charmonium final states. Physical Review D, 2002, 65, .	1.6	56
18	Geant4 Atomic Relaxation. IEEE Transactions on Nuclear Science, 2007, 54, 585-593.	1.2	55

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19	Evidence for $\chi$ resonances in antiproton-proton annihilations at. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1993, 307, 394-398.	1.5	52
20	Radioactive Decays in Geant4. IEEE Transactions on Nuclear Science, 2013, 60, 2966-2983.	1.2	49
21	Investigation of Geant4 Simulation of Electron Backscattering. IEEE Transactions on Nuclear Science, 2015, 62, 1805-1812.	1.2	47
22	Geant4 and its validation. Nuclear Physics, Section B, Proceedings Supplements, 2006, 150, 44-49.	0.5	46
23	Geant4 applications and developments for medical physics experiments. IEEE Transactions on Nuclear Science, 2004, 51, 1412-1419.	1.2	45
24	The Geant4 Toolkit: simulation capabilities and application results. Nuclear Physics, Section B, Proceedings Supplements, 2003, 125, 60-68.	0.5	42
25	PIXE Simulation With Geant4. IEEE Transactions on Nuclear Science, 2009, 56, 3614-3649.	1.2	42
26	Formation of the $\chi_1$ and $\chi_2$ charmonium resonances in antiproton-proton annihilation and measurements of their masses and total widths. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1986, 172, 455-460.	1.5	39
27	Direct observation and partial-width measurement of $\chi_3$ decay of charmonium states. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1987, 187, 191-197.	1.5	39
28	Measurement of $B(\chi_1 \rightarrow K^* \chi_3)$ Branching Fractions and Charge Asymmetries. Physical Review Letters, 2002, 88, 101805.	2.9	38
29	New Developments of the Goodness-of-Fit Statistical Toolkit. IEEE Transactions on Nuclear Science, 2006, 53, 3834-3841.	1.2	36
30	Photon Elastic Scattering Simulation: Validation and Improvements to Geant4. IEEE Transactions on Nuclear Science, 2012, 59, 1636-1664.	1.2	36
31	Validation of Geant4 Low Energy Electromagnetic Processes Against Precision Measurements of Electron Energy Deposition. IEEE Transactions on Nuclear Science, 2009, 56, 398-416.	1.2	35
32	Validation of Cross Sections for Monte Carlo Simulation of the Photoelectric Effect. IEEE Transactions on Nuclear Science, 2016, 63, 1117-1146.	1.2	34
33	$\chi_1$ resonant formation and mass measurement in antiproton-proton annihilations. Nuclear Physics B, 1987, 286, 592-634.	0.9	32
34	Measurement of the $\chi_3$ partial width of the $\chi_2$ charmonium resonance. Physical Review Letters, 1993, 70, 2988-2991.	2.9	32
35	Study of the $\chi_c(11S_0)$ state of charmonium formed in $p\bar{p}$ annihilations and a search for the $\chi_c(21S_0)$ . Physical Review D, 1995, 52, 4839-4854.	1.6	32
36	Precision measurements of charmonium states formed in $p\bar{p}$ annihilation. Physical Review Letters, 1992, 68, 1468-1471.	2.9	31

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37	Study of the angular distribution of the reaction $p + \bar{p} \rightarrow \pi^+ \pi^- \pi^0$ . Physical Review D, 1993, 48, 3037-3044.	4.4	30
38	Measurement of $B^0 \rightarrow B^+ B^-$ Flavor Oscillations in Hadronic Decays. Physical Review Letters, 2002, 88, 221802.	2.9	29
39	Validation of Geant4 Atomic Relaxation Against the NIST Physical Reference Data. IEEE Transactions on Nuclear Science, 2007, 54, 594-603.	1.2	27
40	Validation of $\{m K\}$ and $\{m L\}$ Shell Radiative Transition Probability Calculations. IEEE Transactions on Nuclear Science, 2009, 56, 3650-3661.	1.2	27
41	Validation of Geant4 Simulation of Electron Energy Deposition. IEEE Transactions on Nuclear Science, 2013, 60, 2934-2957.	1.2	25
42	Observation of $\pi^+ \pi^-$ production in the reaction at 1.4 GeV / c incident momentum. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1995, 345, 325-334.	1.5	24
43	Evaluation of Atomic Electron Binding Energies for Monte Carlo Particle Transport. IEEE Transactions on Nuclear Science, 2011, 58, 3246-3268.	1.2	23
44	Search for $T$ and $CP$ Violation in $B^0 \rightarrow B^+ B^-$ Mixing with Inclusive Dilepton Events. Physical Review Letters, 2002, 88, 231801.	2.9	22
45	Measurement of the $B^0 \rightarrow B^+ B^-$ Oscillation Frequency with Inclusive Dilepton Events. Physical Review Letters, 2002, 88, 221803.	2.9	22
46	Radiation exposure and Mission Strategies for Interplanetary Manned Missions (REMSIM). Earth, Moon and Planets, 2005, 94, 279-285.	0.3	22
47	Validation of Geant4-Based Radioactive Decay Simulation. IEEE Transactions on Nuclear Science, 2013, 60, 2984-2997.	1.2	22
48	The GEANT4 toolkit capability in the hadron therapy field: simulation of a transport beam line. Nuclear Physics, Section B, Proceedings Supplements, 2006, 150, 54-57.	0.5	19
49	Production of the $f_2(1520)$ resonance in antiproton-proton annihilations at. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1993, 307, 399-402.	1.5	18
50	Physics-Related Epistemic Uncertainties in Proton Depth Dose Simulation. IEEE Transactions on Nuclear Science, 2010, 57, 2805-2830.	1.2	18
51	Direct $CP$ violation searches in charmless hadronic $B$ meson decays. Physical Review D, 2002, 65, .	1.6	17
52	Ionization Cross Sections for Low Energy Electron Transport. IEEE Transactions on Nuclear Science, 2011, 58, 3219-3245.	1.2	16
53	First Assessment of ENDF/B-VIII and EPICS Atomic Data Libraries. IEEE Transactions on Nuclear Science, 2018, 65, 2268-2278.	1.2	16
54	Measurement of $D_s^+$ and $D_s^{*+}$ production in $B$ meson decays and from continuum $e^+ e^-$ annihilation at $\sqrt{s} = 10.6$ GeV. Physical Review D, 2002, 65, .	1.6	13

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55	Packaging Effects on RadFET Sensors for High Energy Physics Experiments. IEEE Transactions on Nuclear Science, 2009, 56, 2061-2069.	1.2	13
56	ISICSoo: A class for the calculation of ionization cross sections from ECPSSR and PWBA theory. Computer Physics Communications, 2012, 183, 398-404.	3.0	13
57	Quantitative Test of the Evolution of Geant4 Electron Backscattering Simulation. IEEE Transactions on Nuclear Science, 2016, 63, 2849-2865.	1.2	13
58	Measurement of the $B^0$ Lifetime with Partially Reconstructed $B^0 \rightarrow D^* \pi^+ \pi^-$ Decays. Physical Review Letters, 2002, 89, 011802.	2.9	11
59	Angular distributions in the reactions. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1987, 195, 85-90.	1.5	10
60	Validation of Proton Ionization Cross Section Generators for Monte Carlo Particle Transport. IEEE Transactions on Nuclear Science, 2011, 58, 3269-3280.	1.2	10
61	Distributed geant4 simulation in medical and space science applications using DIANE framework and the GRID. Nuclear Physics, Section B, Proceedings Supplements, 2003, 125, 327-331.	0.5	9
62	Writing Software or Writing Scientific Articles?. IEEE Transactions on Nuclear Science, 2008, 55, 671-678.	1.2	9
63	The muon and neutral hadron detector for BaBar. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1998, 409, 542-546.	0.7	8
64	A powerful simulation tool for medical physics applications: Geant4. Nuclear Physics, Section B, Proceedings Supplements, 2003, 125, 80-84.	0.5	8
65	Geant4 atomic relaxation. , 0, , .		8
66	Measuring and Interpreting X-ray Fluorescence from Planetary Surfaces. Analytical Chemistry, 2008, 80, 8398-8405.	3.2	8
67	Design and performance evaluations of generic programming techniques in a R&D prototype of Geant4 physics. Journal of Physics: Conference Series, 2010, 219, 042019.	0.3	8
68	Upper limits of the proton magnetic form factor in the time-like region from $p \rightarrow e^+e^-$ at the CERN-ISR. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1985, 163, 400-403.	1.5	7
69	Measurement of the $\pi^+\pi^-$ cross section in p annihilations at $\sqrt{s} \approx 3$ GeV. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1989, 231, 557-562.	1.5	7
70	<title>HERMES: an imaging x-ray fluorescence spectrometer for the BepiColombo mission to Mercury</title>. , 2001, , .		7
71	Uncertainty quantification (UQ) in generic MonteCarlo simulations. , 2012, , .		7
72	First statistical analysis of Geant4 quality software metrics. Journal of Physics: Conference Series, 2015, 664, 062053.	0.3	7

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73	The BaBar detector for muon identification and neutral hadron detection. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1996, 379, 472-474.	0.7	6
74	Geant4 Model for the Stopping Power of Low Energy Negatively Charged Hadrons. IEEE Transactions on Nuclear Science, 2007, 54, 578-584.	1.2	6
75	Validation of Geant4 X-ray fluorescence transitions - validation of Geant4 electromagnetic models against calorimetry measurements in the energy range up to 1 MeV. , 2008, , .		6
76	Geant4 in scientific literature. , 2009, , .		6
77	Measurement of the branching fractions for $\tilde{\chi}(2S) \rightarrow e^+e^-$ and $\tilde{\chi}(2S) \rightarrow \tau^+\tau^-$ . Physical Review D, 2001, 65, .	1.6	5
78	Study of $B \rightarrow \tau^+ \nu_\tau$ and $B \rightarrow K^+ \nu_\tau$ decays: Measurement of the ratio of branching fractions and search for direct CP-violating charge asymmetries. Physical Review D, 2002, 65, .	1.6	5
79	Evaluation of the power of Goodness-of-Fit tests for the comparison of data distributions. , 2006, , .		5
80	Geant4 Anthropomorphic Phantoms. , 2006, , .		5
81	Validation of Geant4 low energy physics models against electron energy deposition and backscattering data. , 2007, , .		5
82	Effect of Normalization Algorithms on the Analysis of Bragg Peak Profiles. IEEE Transactions on Nuclear Science, 2008, 55, 3544-3549.	1.2	5
83	Experimental quantification of Geant4 PhysicsList recommendations: methods and results. Journal of Physics: Conference Series, 2015, 664, 072037.	0.3	5
84	Precision measurements of the antiproton-proton elastic scattering cross section at $90^\circ$ in the incident momentum range between 3.5 GeV/c and 5.7 GeV/c. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1989, 225, 296-300.	1.5	4
85	Application of the Geant4 PIXE implementation for space missions new models for PIXE simulation with Geant4. , 2008, , .		4
86	New Geant4 developments for doppler broadening simulation in Compton scattering - development of charge transfer simulation models in Geant4. , 2008, , .		4
87	New models for PIXE simulation with Geant4. Journal of Physics: Conference Series, 2010, 219, 032018.	0.3	4
88	An exact framework for uncertainty quantification in Monte Carlo simulation. Journal of Physics: Conference Series, 2014, 513, 022033.	0.3	4
89	Validation of Shell Ionization Cross Sections for Monte Carlo Electron Transport. IEEE Transactions on Nuclear Science, 2018, 65, 2279-2302.	1.2	4
90	Monte Carlo dose calculation algorithm on a distributed system. Nuclear Physics, Section B, Proceedings Supplements, 2003, 125, 159-163.	0.5	3

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91	Geant4 Simulation for LHC Radiation Monitoring. , 2006, , .		3
92	Corrected ISICSoo class version. Computer Physics Communications, 2013, 184, 2232-2233.	3.0	3
93	Validation of Compton scattering Monte Carlo simulation models. , 2013, , .		3
94	Evolutions in Photoelectric Cross Section Calculations and Their Validation. IEEE Transactions on Nuclear Science, 2020, 67, 492-501.	1.2	3
95	Measurement of the $\pi^0\pi^0$ cross section in annihilations at $\sqrt{s} \approx 3.0$ GeV. Nuclear Physics B, 1992, 368, 175-189.	0.9	2
96	Publisher's Note: Measurement of the $B^0$ lifetime with Partially Reconstructed $B^0 \rightarrow D^* \pi^+ \pi^-$ Decays [Phys. Rev. Lett. PRLTAO0031-900789, 011802 (2002)]. Physical Review Letters, 2002, 89, .	2.9	2
97	A new low-energy bremsstrahlung generator for GEANT4. Radiation Protection Dosimetry, 2005, 116, 59-64.	0.4	2
98	Geant4 model for the stopping power of low energy negatively charged hadrons. , 2006, , .		2
99	Evaluation of phase effects in Geant4 microdosimetry models for particle interactions in water. , 2007, , .		2
100	Analysis of Geant4 simulations of proton depth dose profiles for radiotherapy applications. , 2008, , .		2
101	New data libraries and physics data management tools. Journal of Physics: Conference Series, 2011, 331, 042010.	0.3	2
102	Application of econometric data analysis methods to physics software. , 2016, , .		2
103	Quantification of the validity of simulations based on Geant4 and FLUKA for photo-nuclear interactions in the high energy range. EPJ Web of Conferences, 2017, 153, 06023.	0.1	2
104	Light quark spectroscopy at the Fermilab antiproton accumulator. Nuclear Physics A, 1993, 558, 53-61.	0.6	1
105	Trends in computing. IEEE Transactions on Nuclear Science, 2004, 51, 2050-2055.	1.2	1
106	Technology transfer from HEP computing to the medical field: overview and application to dosimetry. Nuclear Physics, Section B, Proceedings Supplements, 2006, 150, 13-18.	0.5	1
107	Geant4 Simulation in a Distributed Computing Environment. , 2006, , .		1
108	Writing software or writing scientific articles?. , 2007, , .		1

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109	Ionisation models for nano-scale simulation. , 2010, , .		1
110	Physics data management tools for Monte Carlo transport: Computational evolutions and benchmarks. , 2010, , .		1
111	Refactoring, reengineering and evolution: paths to Geant4 uncertainty quantification and performance improvement. Journal of Physics: Conference Series, 2012, 396, 022038.	0.3	1
112	Background simulations for the wide field imager aboard the ATHENA X-ray Observatory. Proceedings of SPIE, 2012, , .	0.8	1
113	Publication patterns in HEP computing. Journal of Physics: Conference Series, 2012, 396, 062015.	0.3	1
114	Algorithms and parameters for improved accuracy in physics data libraries. Journal of Physics: Conference Series, 2012, 396, 022039.	0.3	1
115	Physics methods for the simulation of photoionisation. , 2013, , .		1
116	Theoretical Grounds for the Propagation of Uncertainties in Monte Carlo Particle Transport. IEEE Transactions on Nuclear Science, 2014, 61, 877-887.	1.2	1
117	Scholarly literature and the press: scientific impact and social perception of physics computing. Journal of Physics: Conference Series, 2014, 513, 062039.	0.3	1
118	How do particle physicists learn the programming concepts they need?. Journal of Physics: Conference Series, 2015, 664, 062048.	0.3	1
119	Photons Revisited. , 2014, , .		1
120	Validation of $e^+e^-$ Pair Production Total Cross Sections for Monte Carlo Particle Transport. IEEE Transactions on Nuclear Science, 2022, 69, 858-870.	1.2	1
121	A stack of two-dimensional multiwire proportional chambers as part of an electromagnetic calorimeter. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1987, 262, 269-283.	0.7	0
122	Charmonium formation in annihilation by experiment E760. Nuclear Physics A, 1993, 558, 259-267.	0.6	0
123	Correction to "A Goodness-of-Fit Statistical Toolkit". IEEE Transactions on Nuclear Science, 2004, 51, 3118-3118.	1.2	0
124	A Statistical Toolkit for Data Analysis. Nuclear Physics, Section B, Proceedings Supplements, 2006, 150, 50-53.	0.5	0
125	Benchmark of medical dosimetry simulation using the Grid. , 2007, , .		0
126	Analysis of statistical algorithms for the comparison of data distributions in physic experiments. , 2007, , .		0



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127	The impact of technological research through an analysis of literature. , 2008, , .		0
128	Validation of fluorescence transition probability calculations. , 2009, , .		0
129	R&D on co-working transport schemes in Geant4. Journal of Physics: Conference Series, 2010, 219, 032055.	0.3	0
130	Quantifying the unknown. , 2010, , .		0
131	New physics data libraries for Monte Carlo transport. , 2010, , .		0
132	The butterfly effect: Correlations between modeling in nuclear-particle physics and socioeconomic factors. , 2010, , .		0
133	Atomic parameters for Monte Carlo transport simulation: Survey, validation and induced systematic effects. , 2010, , .		0
134	Background simulations of the wide field imager of the ATHENA X-ray observatory. , 2011, , .		0
135	An activation experiment with laser-accelerated high-energy protons to optimize the graded-z shield design for the IXO/ATHENA satellite missions. , 2011, , .		0
136	A new development cycle of the Statistical Toolkit. Journal of Physics: Conference Series, 2012, 396, 052010.	0.3	0
137	Precision analysis of Geant4 condensed transport effects on energy deposition in detectors. Journal of Physics: Conference Series, 2012, 396, 022004.	0.3	0
138	Progress with Uncertainty Quantification in generic Monte Carlo simulations. , 2013, , .		0
139	PIXE simulation: Models, methods and technologies. , 2013, , .		0
140	Editorial Conference Comments by the Editors. IEEE Transactions on Nuclear Science, 2013, 60, 480-481.	1.2	0
141	Data analysis with R in an experimental physics environment. , 2013, , .		0
142	Negative improvements, relative validity and elusive goodness. , 2013, , .		0
143	Geant4 and beyond: Precision physics modeling and validation. , 2014, , .		0
144	Methods, techniques and recent results in Monte Carlo simulation validation for sensitive applications. , 2015, , .		0

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145	Testable physics by design. Journal of Physics: Conference Series, 2015, 664, 062047.	0.3	0
146	Simulation validation epistemics in a Geant4 case study. , 2016, , .		0
147	Comments by the Guest Editor. IEEE Transactions on Nuclear Science, 2016, 63, 1445-1445.	1.2	0
148	Geant4 maintainability assessed with respect to software engineering references. , 2016, , .		0
149	Propagation of input uncertainties in particle transport and the distribution of the sum of n independent stochastic variables a generalization of the Irwinâ€™Hall distribution. Chinese Journal of Physics, 2017, 55, 652-666.	2.0	0
150	Application of econometric and ecology analysis methods in physics software. Journal of Physics: Conference Series, 2017, 898, 072018.	0.3	0
151	Analysis Methods for Data Comparison. , 2017, , .		0
152	Measurements and Trends of Geant4 Software Evolution. , 2017, , .		0
153	Tutorial on Statistical Methods for Validation Tests. , 2017, , .		0
154	The Systematics of Fluorescence Yields. , 2017, , .		0
155	HEPData beyond HEP. , 2017, , .		0
156	Old and New Cross Sections. , 2017, , .		0
157	Evaluated Atomic Data: a Review of Their Validation. , 2017, , .		0
158	Validation of Geant4 Simulation of Proton Energy Straggling: First Results. , 2018, , .		0