

Jan Schuemann

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

101
papers

2,535
citations

26
h-index

49
g-index

129
ext. papers

3,337
ext. citations

4
avg, IF

5.17
L-index

#	Paper	IF	Citations
101	TOPAS: an innovative proton Monte Carlo platform for research and clinical applications. <i>Medical Physics</i> , 2012 , 39, 6818-37	4.4	435
100	A phenomenological relative biological effectiveness (RBE) model for proton therapy based on all published in vitro cell survival data. <i>Physics in Medicine and Biology</i> , 2015 , 60, 8399-416	3.8	184
99	Range uncertainty in proton therapy due to variable biological effectiveness. <i>Physics in Medicine and Biology</i> , 2012 , 57, 1159-72	3.8	160
98	Roadmap to Clinical Use of Gold Nanoparticles for Radiation Sensitization. <i>International Journal of Radiation Oncology Biology Physics</i> , 2016 , 94, 189-205	4	132
97	Comparing gold nano-particle enhanced radiotherapy with protons, megavoltage photons and kilovoltage photons: a Monte Carlo simulation. <i>Physics in Medicine and Biology</i> , 2014 , 59, 7675-89	3.8	114
96	Measurement of branching fractions and polarization in $B \rightarrow \pi K^*$ decays. <i>Physical Review Letters</i> , 2003 , 91, 201801	7.4	96
95	Difference in direct charge-parity violation between charged and neutral B meson decays. <i>Nature</i> , 2008 , 452, 332-5	50.4	86
94	Biological modeling of gold nanoparticle enhanced radiotherapy for proton therapy. <i>Physics in Medicine and Biology</i> , 2015 , 60, 4149-68	3.8	85
93	Site-specific range uncertainties caused by dose calculation algorithms for proton therapy. <i>Physics in Medicine and Biology</i> , 2014 , 59, 4007-31	3.8	84
92	Experimental validation of the TOPAS Monte Carlo system for passive scattering proton therapy. <i>Medical Physics</i> , 2013 , 40, 121719	4.4	75
91	Assessing the Clinical Impact of Approximations in Analytical Dose Calculations for Proton Therapy. <i>International Journal of Radiation Oncology Biology Physics</i> , 2015 , 92, 1157-1164	4	63
90	Evidence for the appearance of atmospheric tau neutrinos in super-Kamiokande. <i>Physical Review Letters</i> , 2013 , 110, 181802	7.4	61
89	Mechanistic Modelling of DNA Repair and Cellular Survival Following Radiation-Induced DNA Damage. <i>Scientific Reports</i> , 2016 , 6, 33290	4.9	50
88	Dosimetric feasibility of real-time MRI-guided proton therapy. <i>Medical Physics</i> , 2014 , 41, 111713	4.4	48
87	TOPAS-nBio: An Extension to the TOPAS Simulation Toolkit for Cellular and Sub-cellular Radiobiology. <i>Radiation Research</i> , 2019 , 191, 125-138	3.1	48
86	Validation of the radiobiology toolkit TOPAS-nBio in simple DNA geometries. <i>Physica Medica</i> , 2017 , 33, 207-215	2.7	47
85	Extension of TOPAS for the simulation of proton radiation effects considering molecular and cellular endpoints. <i>Physics in Medicine and Biology</i> , 2015 , 60, 5053-70	3.8	46

84	Roadmap for metal nanoparticles in radiation therapy: current status, translational challenges, and future directions. <i>Physics in Medicine and Biology</i> , 2020 , 65, 21RM02	3.8	45
83	Dependence of gold nanoparticle radiosensitization on cell geometry. <i>Nanoscale</i> , 2017 , 9, 5843-5853	7.7	41
82	Validation of a GPU-based Monte Carlo code (gPMC) for proton radiation therapy: clinical cases study. <i>Physics in Medicine and Biology</i> , 2015 , 60, 2257-69	3.8	38
81	Gold nanoparticle induced vasculature damage in radiotherapy: Comparing protons, megavoltage photons, and kilovoltage photons. <i>Medical Physics</i> , 2015 , 42, 5890-902	4.4	36
80	Dose enhancement effects to the nucleus and mitochondria from gold nanoparticles in the cytosol. <i>Physics in Medicine and Biology</i> , 2016 , 61, 5993-6010	3.8	36
79	A general mechanistic model enables predictions of the biological effectiveness of different qualities of radiation. <i>Scientific Reports</i> , 2017 , 7, 10790	4.9	32
78	A New Standard DNA Damage (SDD) Data Format. <i>Radiation Research</i> , 2019 , 191, 76-92	3.1	32
77	Search for nucleon decay via $n \rightarrow \bar{\nu} + \bar{e}$ and $p \rightarrow \bar{\nu} + \pi$ in Super-Kamiokande. <i>Physical Review Letters</i> , 2014 , 113, 121802	7.4	28
76	The TOPAS tool for particle simulation, a Monte Carlo simulation tool for physics, biology and clinical research. <i>Physica Medica</i> , 2020 , 72, 114-121	2.7	26
75	Monte Carlo simulation of chemistry following radiolysis with TOPAS-nBio. <i>Physics in Medicine and Biology</i> , 2018 , 63, 105014	3.8	25
74	Recent developments and comprehensive evaluations of a GPU-based Monte Carlo package for proton therapy. <i>Physics in Medicine and Biology</i> , 2016 , 61, 7347-7362	3.8	25
73	Assessing the radiation-induced second cancer risk in proton therapy for pediatric brain tumors: the impact of employing a patient-specific aperture in pencil beam scanning. <i>Physics in Medicine and Biology</i> , 2016 , 61, 12-22	3.8	23
72	An algorithm to assess the need for clinical Monte Carlo dose calculation for small proton therapy fields based on quantification of tissue heterogeneity. <i>Medical Physics</i> , 2013 , 40, 081704	4.4	23
71	Determining the Radiation Enhancement Effects of Gold Nanoparticles in Cells in a Combined Treatment with Cisplatin and Radiation at Therapeutic Megavoltage Energies. <i>Cancers</i> , 2018 , 10,	6.6	19
70	Automated Monte Carlo Simulation of Proton Therapy Treatment Plans. <i>Technology in Cancer Research and Treatment</i> , 2016 , 15, NP35-NP46	2.7	18
69	Intercomparison of dose enhancement ratio and secondary electron spectra for gold nanoparticles irradiated by X-rays calculated using multiple Monte Carlo simulation codes. <i>Physica Medica</i> , 2020 , 69, 147-163	2.7	17
68	Radio-enhancement by gold nanoparticles and their impact on water radiolysis for x-ray, proton and carbon-ion beams. <i>Physics in Medicine and Biology</i> , 2019 , 64, 175005	3.8	15
67	Geometrical structures for radiation biology research as implemented in the TOPAS-nBio toolkit. <i>Physics in Medicine and Biology</i> , 2018 , 63, 175018	3.8	14

66	Biological and dosimetric characterisation of spatially fractionated proton minibeam. <i>Physics in Medicine and Biology</i> , 2017 , 62, 9260-9281	3.8	13
65	Search for GUT monopoles at SuperKamiokande. <i>Astroparticle Physics</i> , 2012 , 36, 131-136	2.4	13
64	Relative biological effectiveness (RBE) and out-of-field cell survival responses to passive scattering and pencil beam scanning proton beam deliveries. <i>Physics in Medicine and Biology</i> , 2012 , 57, 6671-80	3.8	12
63	LET-Dependent Intertrack Yields in Proton Irradiation at Ultra-High Dose Rates Relevant for FLASH Therapy. <i>Radiation Research</i> , 2020 , 194, 351-362	3.1	12
62	Use of a lipid nanoparticle system as a Trojan horse in delivery of gold nanoparticles to human breast cancer cells for improved outcomes in radiation therapy. <i>Cancer Nanotechnology</i> , 2019 , 10,	7.9	11
61	A parameter sensitivity study for simulating DNA damage after proton irradiation using TOPAS-nBio. <i>Physics in Medicine and Biology</i> , 2020 , 65, 085015	3.8	11
60	Modulation of nanoparticle uptake, intracellular distribution, and retention with docetaxel to enhance radiotherapy. <i>British Journal of Radiology</i> , 2020 , 93, 20190742	3.4	11
59	The microdosimetric extension in TOPAS: development and comparison with published data. <i>Physics in Medicine and Biology</i> , 2019 , 64, 145004	3.8	10
58	Computational Modeling and Clonogenic Assay for Radioenhancement of Gold Nanoparticles Using 3D Live Cell Images. <i>Radiation Research</i> , 2018 , 190, 558-564	3.1	10
57	Cellular Response to Proton Irradiation: A Simulation Study with TOPAS-nBio. <i>Radiation Research</i> , 2020 , 194, 9-21	3.1	9
56	Energy optimization in gold nanoparticle enhanced radiation therapy. <i>Physics in Medicine and Biology</i> , 2018 , 63, 135001	3.8	9
55	Mitochondria as a target for radiosensitisation by gold nanoparticles. <i>Journal of Physics: Conference Series</i> , 2017 , 777, 012008	0.3	8
54	Comparing stochastic proton interactions simulated using TOPAS-nBio to experimental data from fluorescent nuclear track detectors. <i>Physics in Medicine and Biology</i> , 2017 , 62, 3237-3249	3.8	8
53	Brain Necrosis in Adult Patients After Proton Therapy: Is There Evidence for Dependency on Linear Energy Transfer?. <i>International Journal of Radiation Oncology Biology Physics</i> , 2021 , 109, 109-119	4	8
52	Flagged uniform particle splitting for variance reduction in proton and carbon ion track-structure simulations. <i>Physics in Medicine and Biology</i> , 2017 , 62, 5908-5925	3.8	7
51	Limitations of analytical dose calculations for small field proton radiosurgery. <i>Physics in Medicine and Biology</i> , 2017 , 62, 246-257	3.8	6
50	Modulation of gold nanoparticle mediated radiation dose enhancement through synchronization of breast tumor cell population. <i>British Journal of Radiology</i> , 2019 , 92, 20190283	3.4	6
49	Targeting the DNA replication stress phenotype of KRAS mutant cancer cells. <i>Scientific Reports</i> , 2021 , 11, 3656	4.9	5

48	Impact of uncertainties in range and RBE on small field proton therapy. <i>Physics in Medicine and Biology</i> , 2019 , 64, 205005	3.8	4
47	Intercomparison of Monte Carlo calculated dose enhancement ratios for gold nanoparticles irradiated by X-rays: Assessing the uncertainty and correct methodology for extended beams. <i>Physica Medica</i> , 2021 , 84, 241-253	2.7	4
46	SU-E-T-475: Nano-Dosimetric Track Structure Scoring including Biological Modeling with TOPAS-NBio. <i>Medical Physics</i> , 2012 , 39, 3814	4.4	3
45	WE-H-BRA-01: BEST IN PHYSICS (THERAPY): Nano-Dosimetric Kinetic Model for Variable Relative Biological Effectiveness of Proton and Ion Beams. <i>Medical Physics</i> , 2016 , 43, 3842-3842	4.4	3
44	SU-E-T-500: Pencil-Beam versus Monte Carlo Based Dose Calculation for Proton Therapy Patients with Complex Geometries. Clinical Use of the TOPAS Monte Carlo System. <i>Medical Physics</i> , 2012 , 39, 3820-3824	4.4	3
43	Challenges in the quantification approach to a radiation relevant adverse outcome pathway for lung cancer. <i>International Journal of Radiation Biology</i> , 2021 , 97, 85-101	2.9	3
42	Monte Carlo Processing on a Chip (MCoaC)-preliminary experiments toward the realization of optimal-hardware for TOPAS/Geant4 to drive discovery. <i>Physica Medica</i> , 2019 , 64, 166-173	2.7	2
41	Time-resolved diode dosimetry calibration through Monte Carlo modeling for in vivo passive scattered proton therapy range verification. <i>Journal of Applied Clinical Medical Physics</i> , 2017 , 18, 200-205	2.3	2
40	WE-F-105-03: Development of GPMC V2.0, a GPU-Based Monte Carlo Dose Calculation Package for Proton Radiotherapy. <i>Medical Physics</i> , 2013 , 40, 498-498	4.4	2
39	SU-E-T-180: Fano Cavity Test of Proton Transport in Monte Carlo Codes Running On GPU and Xeon Phi. <i>Medical Physics</i> , 2014 , 41, 264-264	4.4	2
38	TU-F-CAMPUS-T-04: Using Gold Nanoparticles to Target Mitochondria in Radiation Therapy. <i>Medical Physics</i> , 2015 , 42, 3644-3644	4.4	2
37	Improving proton dose calculation accuracy by using deep learning. <i>Machine Learning: Science and Technology</i> , 2021 , 2, 015017	5.1	2
36	Dosimetric Uncertainties and Their Impact on Treatment Planning in Stereotactic Proton Radiosurgery. <i>International Journal of Radiation Oncology Biology Physics</i> , 2016 , 96, E618	4	2
35	Computational models and tools. <i>Medical Physics</i> , 2018 , 45, e1073-e1085	4.4	2
34	Monte Carlo methods for device simulations in radiation therapy. <i>Physics in Medicine and Biology</i> , 2021 , 66,	3.8	2
33	SU-E-T-464: On the Equivalence of the Quality Correction Factor for Pencil Beam Scanning Proton Therapy. <i>Medical Physics</i> , 2014 , 41, 333-333	4.4	1
32	SU-F-T-139: Meeting the Challenges of Quality Control in the TOPAS Monte Carlo Simulation Toolkit for Proton Therapy. <i>Medical Physics</i> , 2016 , 43, 3493-3494	4.4	1
31	Comparing 2 Monte Carlo Systems in Use for Proton Therapy Research. <i>International Journal of Particle Therapy</i> , 2019 , 6, 18-27	1.5	1

30	Application of High-Z Gold Nanoparticles in Targeted Cancer Radiotherapy-Pharmacokinetic Modeling, Monte Carlo Simulation and Radiobiological Effect Modeling. <i>Cancers</i> , 2021 , 13,	6.6	1
29	SU-F-BRD-13: A Phenomenological Relative Biological Effectiveness (RBE) Model for Proton Therapy Based On All Published in Vitro Cell Survival Data. <i>Medical Physics</i> , 2015 , 42, 3528-3528	4.4	1
28	TOPAS-nBio validation for simulating water radiolysis and DNA damage under low-LET irradiation. <i>Physics in Medicine and Biology</i> , 2021 , 66,	3.8	1
27	Consistency checks of results from a Monte Carlo code intercomparison for emitted electron spectra and energy deposition around a single gold nanoparticle irradiated by X-rays. <i>Radiation Measurements</i> , 2021 , 147, 106637	1.5	0
26	TH-A-19A-02: Expanding TOPAS Towards Biological Modeling. <i>Medical Physics</i> , 2014 , 41, 533-533	4.4	
25	TH-A-19A-11: Validation of GPU-Based Monte Carlo Code (gPMC) Versus Fully Implemented Monte Carlo Code (TOPAS) for Proton Radiation Therapy: Clinical Cases Study. <i>Medical Physics</i> , 2014 , 41, 535-535	4.4	
24	TH-A-19A-06: Site-Specific Comparison of Analytical and Monte Carlo Based Dose Calculations. <i>Medical Physics</i> , 2014 , 41, 534-534	4.4	
23	WE-D-BRF-01: FEATURED PRESENTATION - Investigating Particle Track Structures Using Fluorescent Nuclear Track Detectors and Monte Carlo Simulations. <i>Medical Physics</i> , 2014 , 41, 495-495	4.4	
22	WE-G-BRE-02: Biological Modeling of Gold Nanoparticle Radiosensitization for Proton Therapy. <i>Medical Physics</i> , 2014 , 41, 517-517	4.4	
21	WE-G-BRE-04: Gold Nanoparticle Induced Vasculature Damage for Proton Therapy: Monte Carlo Simulation. <i>Medical Physics</i> , 2014 , 41, 517-517	4.4	
20	SU-E-T-135: Assessing the Clinical Impact of Approximations in Analytical Dose Calculations for Proton Therapy. <i>Medical Physics</i> , 2015 , 42, 3362-3362	4.4	
19	SU-E-T-673: Recent Developments and Comprehensive Validations of a GPU-Based Proton Monte Carlo Simulation Package, GPMC. <i>Medical Physics</i> , 2015 , 42, 3491-3491	4.4	
18	WE-H-BRA-07: Mechanistic Modelling of the Relative Biological Effectiveness of Heavy Charged Particles. <i>Medical Physics</i> , 2016 , 43, 3844-3844	4.4	
17	SU-F-T-682: In-Vivo Simulation of the Relative Biological Effectiveness in Proton Therapy Using a Monte Carlo Method. <i>Medical Physics</i> , 2016 , 43, 3621-3621	4.4	
16	TH-CD-201-07: Experimentally Investigating Proton Energy Deposition On the Microscopic Scale Using Fluorescence Nuclear Track Detectors. <i>Medical Physics</i> , 2016 , 43, 3870-3871	4.4	
15	SU-F-T-157: Physics Considerations Regarding Dosimetric Accuracy of Analytical Dose Calculations for Small Field Proton Therapy: A Monte Carlo Study. <i>Medical Physics</i> , 2016 , 43, 3498-3498	4.4	
14	WE-DE-202-00: Connecting Radiation Physics with Computational Biology. <i>Medical Physics</i> , 2016 , 43, 3815-3815	4.4	
13	WE-AB-207B-06: Dose and Biological Uncertainties in Sarcoma. <i>Medical Physics</i> , 2016 , 43, 3805-3805	4.4	

12	WE-DE-202-01: Connecting Nanoscale Physics to Initial DNA Damage Through Track Structure Simulations. <i>Medical Physics</i> , 2016 , 43, 3815-3815	4-4
11	MO-FG-CAMPUS-TeP3-02: Benchmarks of a Proton Relative Biological Effectiveness (RBE) Model for DNA Double Strand Break (DSB) Induction in the FLUKA, MCNP, TOPAS, and RayStation [®] Treatment Planning System. <i>Medical Physics</i> , 2016 , 43, 3727-3728	4-4
10	Poster - 16: Time-resolved diode dosimetry for in vivo proton therapy range verification: calibration through numerical modeling. <i>Medical Physics</i> , 2016 , 43, 4939-4939	4-4
9	SU-E-T-473: Performance Assessment of the TOPAS Tool for Particle Simulation for Proton Therapy Applications. <i>Medical Physics</i> , 2012 , 39, 3814	4-4
8	SU-E-T-470: Comparison of Proton Treatment Planning and Monte Carlo Calculation Using TOPAS for Liver Cancer. <i>Medical Physics</i> , 2012 , 39, 3813	4-4
7	WE-C-BRB-07: Benchmarking of the TOPAS Monte Carlo System against Phantom Dose Measurements in Proton Therapy. <i>Medical Physics</i> , 2012 , 39, 3945-3945	4-4
6	MO-F-BRB-03: A Method to Assess the Need for Clinical Monte Carlo Dose Calculations for Small Proton Therapy Fields. <i>Medical Physics</i> , 2012 , 39, 3874	4-4
5	SU-E-T-404: Quantification of Proton Dose Enhancement Resulting From Gold Nanoparticles. <i>Medical Physics</i> , 2013 , 40, 297-297	4-4
4	SU-E-T-451: Patient and Site-Specific Assessment of the Value of Routine Monte Carlo Dose Calculation in Proton Therapy. <i>Medical Physics</i> , 2013 , 40, 309-309	4-4
3	TU-A-108-01: Four-Dimensional Monte Carlo Using the TOPAS TOol for PArTicle Simulation. <i>Medical Physics</i> , 2013 , 40, 419-419	4-4
2	WE-C-108-07: Optimal Parameters for Variance Reduction in Monte Carlo Simulations for Proton Therapy. <i>Medical Physics</i> , 2013 , 40, 475-475	4-4
1	WE-G-500-04: A Novel Technique for In-Vivo and Real-Time Range Verification Based On the Characteristic Prompt Gamma Time-Structure of Passively Modulated Proton Beams. <i>Medical Physics</i> , 2013 , 40, 503-503	4-4