Harald Paganetti

List of Publications by Year in Descending Order

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

110 papers	5,699 citations	35 h-index	74 g-index
123 ext. papers	7,112 ext. citations	2.8 avg, IF	6.63 L-index

#	Paper	IF	Citations
110	A dynamic blood flow model to compute absorbed dose to circulating blood and lymphocytes in liver external beam radiotherapy.. *Physics in Medicine and Biology*, **2022**,	3.8	3
109	Predictive Modeling of Survival and Toxicity in Patients With Hepatocellular Carcinoma After Radiotherapy.. *JCO Clinical Cancer Informatics*, **2022**, 6, e2100169	5.2	
108	A mesh-based model of liver vasculature: implications for improved radiation dosimetry to liver parenchyma for radiopharmaceuticals.. *EJNMMI Physics*, **2022**, 9, 28	4.4	
107	CT-on-Rails Versus In-Room CBCT for Online Daily Adaptive Proton Therapy of Head-and-Neck Cancers. *Cancers*, **2021**, 13,	6.6	2
106	Mathematical modeling to simulate the effect of adding radiotherapy to immunotherapy and application to hepatocellular carcinoma. *International Journal of Radiation Oncology Biology Physics*, **2021**,	4	1
105	Adaptive proton therapy. *Physics in Medicine and Biology*, **2021**, 66,	3.8	7
104	Anatomic changes in head and neck intensity-modulated proton therapy: Comparison between robust optimization and online adaptation. *Radiotherapy and Oncology*, **2021**, 159, 39-47	5.3	5
103	Brain-Specific Relative Biological Effectiveness of Protons Based on Long-term Outcome of Patients With Nasopharyngeal Carcinoma. *International Journal of Radiation Oncology Biology Physics*, **2021**, 110, 984-992	4	3
102	HEDOS-a computational tool to assess radiation dose to circulating blood cells during external beam radiotherapy based on whole-body blood flow simulations. *Physics in Medicine and Biology*, **2021**, 66,	3.8	5
101	Brain Necrosis in Adult Patients After Proton Therapy: Is There Evidence for Dependency on Linear Energy Transfer?. *International Journal of Radiation Oncology Biology Physics*, **2021**, 109, 109-119	4	8
100	Comparison of weekly and daily online adaptation for head and neck intensity-modulated proton therapy. *Physics in Medicine and Biology*, **2021**,	3.8	5
99	Mechanisms and Review of Clinical Evidence of Variations in Relative Biological Effectiveness in Proton Therapy. *International Journal of Radiation Oncology Biology Physics*, **2021**,	4	2
98	Monte Carlo methods for device simulations in radiation therapy. *Physics in Medicine and Biology*, **2021**, 66,	3.8	2
97	Cellular Response to Proton Irradiation: A Simulation Study with TOPAS-nBio. *Radiation Research*, **2020**, 194, 9-21	3.1	9
96	4D blood flow model for dose calculation to circulating blood and lymphocytes. *Physics in Medicine and Biology*, **2020**, 65, 055008	3.8	13
95	Evaluation of CBCT scatter correction using deep convolutional neural networks for head and neck adaptive proton therapy. *Physics in Medicine and Biology*, **2020**,	3.8	15
94	End-of-Range Radiobiological Effect on Rib Fractures in Patients Receiving Proton Therapy for Breast Cancer. *International Journal of Radiation Oncology Biology Physics*, **2020**, 107, 449-454	4	21

93	The TOPAS tool for particle simulation, a Monte Carlo simulation tool for physics, biology and clinical research. *Physica Medica*, **2020**, 72, 114-121	2.7	26
92	Synergizing medical imaging and radiotherapy with deep learning. *Machine Learning: Science and Technology*, **2020**, 1, 021001	5.1	9
91	DICOM-RT Ion interface to utilize MC simulations in routine clinical workflow for proton pencil beam radiotherapy. *Physica Medica*, **2020**, 74, 1-10	2.7	1
90	The risk for developing a secondary cancer after breast radiation therapy: Comparison of photon and proton techniques. *Radiotherapy and Oncology*, **2020**, 149, 212-218	5.3	12
89	Volumetric and actuarial analysis of brain necrosis in proton therapy using a novel mixture cure model. *Radiotherapy and Oncology*, **2020**, 142, 154-161	5.3	19
88	Modelling variable proton relative biological effectiveness for treatment planning. *British Journal of Radiology*, **2020**, 93, 20190334	3.4	16
87	A tumor-immune interaction model for hepatocellular carcinoma based on measured lymphocyte counts in patients undergoing radiotherapy. *Radiotherapy and Oncology*, **2020**, 151, 73-81	5.3	14
86	"Cancer risk after breast proton therapy considering physiological and radiobiological uncertainties" by Raptis et al. (Physica Medica 76 (2020) 1-6). *Physica Medica*, **2020**, 80, 274-276	2.7	
85	Modeling Resistance and Recurrence Patterns of Combined Targeted-Chemoradiotherapy Predicts Benefit of Shorter Induction Period. *Cancer Research*, **2020**, 80, 5121-5133	10.1	4
84	Perspectives on the model-based approach to proton therapy trials: A retrospective study of a lung cancer randomized trial. *Radiotherapy and Oncology*, **2020**, 147, 8-14	5.3	4
83	Roadmap: proton therapy physics and biology. *Physics in Medicine and Biology*, **2020**,	3.8	17
82	The impact of variable RBE in proton therapy for left-sided breast cancer when estimating normal tissue complications in the heart and lung. *Physics in Medicine and Biology*, **2020**,	3.8	8
81	Impact of uncertainties in range and RBE on small field proton therapy. *Physics in Medicine and Biology*, **2019**, 64, 205005	3.8	4
80	Report of the AAPM TG-256 on the relative biological effectiveness of proton beams in radiation therapy. *Medical Physics*, **2019**, 46, e53-e78	4.4	98
79	Validation of a model for physical dose variations in irregularly moving targets treated with carbon ion beams. *Medical Physics*, **2019**, 46, 3663-3673	4.4	7
78	The microdosimetric extension in TOPAS: development and comparison with published data. *Physics in Medicine and Biology*, **2019**, 64, 145004	3.8	10
77	Patient-Specific Tumor Growth Trajectories Determine Persistent and Resistant Cancer Cell Populations during Treatment with Targeted Therapies. *Cancer Research*, **2019**, 79, 3776-3788	10.1	19
76	Differential inflammatory response dynamics in normal lung following stereotactic body radiation therapy with protons versus photons. *Radiotherapy and Oncology*, **2019**, 136, 169-175	5.3	5

75	Monte Carlo Processing on a Chip (MCoaC)-preliminary experiments toward the realization of optimal-hardware for TOPAS/Geant4 to drive discovery. *Physica Medica*, **2019**, 64, 166-173	2.7	2
74	Validation of Effective Dose as a Better Predictor of Radiation Pneumonitis Risk Than Mean Lung Dose: Secondary Analysis of a Randomized Trial. *International Journal of Radiation Oncology Biology Physics*, **2019**, 103, 403-410	4	16
73	Report of a National Cancer Institute special panel: Characterization of the physical parameters of particle beams for biological research. *Medical Physics*, **2019**, 46, e37-e52	4.4	11
72	National Cancer Institute Workshop on Proton Therapy for Children: Considerations Regarding Brainstem Injury. *International Journal of Radiation Oncology Biology Physics*, **2018**, 101, 152-168	4	76
71	Brainstem Injury in Pediatric Patients With Posterior Fossa Tumors Treated With Proton Beam Therapy and Associated Dosimetric Factors. *International Journal of Radiation Oncology Biology Physics*, **2018**, 100, 719-729	4	30
70	Robust Proton Treatment Planning: Physical and Biological Optimization. *Seminars in Radiation Oncology*, **2018**, 28, 88-96	5.5	57
69	Asymptomatic Late-phase Radiographic Changes Among Chest-Wall Patients Are Associated With a Proton RBE Exceeding 1.1. *International Journal of Radiation Oncology Biology Physics*, **2018**, 101, 809-819	4	49
68	Can differences in linear energy transfer and thus relative biological effectiveness compromise the dosimetric advantage of intensity-modulated proton therapy as compared to passively scattered proton therapy?. *Acta Oncologica*, **2018**, 57, 1259-1264	3.2	13
67	Geometrical structures for radiation biology research as implemented in the TOPAS-nBio toolkit. *Physics in Medicine and Biology*, **2018**, 63, 175018	3.8	14
66	Relative Biological Effectiveness Uncertainties and Implications for Beam Arrangements and Dose Constraints in Proton Therapy. *Seminars in Radiation Oncology*, **2018**, 28, 256-263	5.5	20
65	Proton Relative Biological Effectiveness - Uncertainties and Opportunities. *International Journal of Particle Therapy*, **2018**, 5, 2-14	1.5	33
64	Impact of potentially variable RBE in liver proton therapy. *Physics in Medicine and Biology*, **2018**, 63, 195008	3.8	6
63	LET-weighted doses effectively reduce biological variability in proton radiotherapy planning. *Physics in Medicine and Biology*, **2018**, 63, 225009	3.8	29
62	Evaluating Intensity Modulated Proton Therapy Relative to Passive Scattering Proton Therapy for Increased Vertebral Column Sparing in Craniospinal Irradiation in Growing Pediatric Patients. *International Journal of Radiation Oncology Biology Physics*, **2017**, 98, 37-46	4	16
61	Predicting Patient-specific Dosimetric Benefits of Proton Therapy for Skull-base Tumors Using a Geometric Knowledge-based Method. *International Journal of Radiation Oncology Biology Physics*, **2017**, 97, 1087-1094	4	16
60	Hydrogel rectum-prostate spacers mitigate the uncertainties in proton relative biological effectiveness associated with anterior-oblique beams. *Acta Oncologica*, **2017**, 56, 575-581	3.2	11
59	Validation of the radiobiology toolkit TOPAS-nBio in simple DNA geometries. *Physica Medica*, **2017**, 33, 207-215	2.7	47
58	Limitations of analytical dose calculations for small field proton radiosurgery. *Physics in Medicine and Biology*, **2017**, 62, 246-257	3.8	6

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57	Prediction of Treatment Response for Combined Chemo- and Radiation Therapy for Non-Small Cell Lung Cancer Patients Using a Bio-Mathematical Model. *Scientific Reports*, **2017**, 7, 13542	4.9	26
56	Relating the proton relative biological effectiveness to tumor control and normal tissue complication probabilities assuming interpatient variability in *Acta Oncologica*, **2017**, 56, 1379-1386	3.2	26
55	A general mechanistic model enables predictions of the biological effectiveness of different qualities of radiation. *Scientific Reports*, **2017**, 7, 10790	4.9	32
54	Consistency in quality correction factors for ionization chamber dosimetry in scanned proton beam therapy. *Medical Physics*, **2017**, 44, 4919-4927	4.4	9
53	Time-resolved diode dosimetry calibration through Monte Carlo modeling for in vivo passive scattered proton therapy range verification. *Journal of Applied Clinical Medical Physics*, **2017**, 18, 200-205	2.3	2
52	Proton Treatment Techniques for Posterior Fossa Tumors: Consequences for Linear Energy Transfer and Dose-Volume Parameters for the Brainstem and Organs at Risk. *International Journal of Radiation Oncology Biology Physics*, **2017**, 97, 401-410	4	32
51	Nuclear physics in particle therapy: a review. *Reports on Progress in Physics*, **2016**, 79, 096702	14.4	143
50	Metal Artifact Reduction in CT: Where Are We After Four Decades?. *IEEE Access*, **2016**, 4, 5826-5849	3.5	96
49	Recent developments and comprehensive evaluations of a GPU-based Monte Carlo package for proton therapy. *Physics in Medicine and Biology*, **2016**, 61, 7347-7362	3.8	25
48	Disruption of SLX4-MUS81 Function Increases the Relative Biological Effectiveness of Proton Radiation. *International Journal of Radiation Oncology Biology Physics*, **2016**, 95, 78-85	4	23
47	Dose assessment for the fetus considering scattered and secondary radiation from photon and proton therapy when treating a brain tumor of the mother. *Physics in Medicine and Biology*, **2016**, 61, 683-95	3.8	13
46	Can We Advance Proton Therapy for Prostate? Considering Alternative Beam Angles and Relative Biological Effectiveness Variations When Comparing Against Intensity Modulated Radiation Therapy. *International Journal of Radiation Oncology Biology Physics*, **2016**, 95, 454-464	4	34
45	Automated Monte Carlo Simulation of Proton Therapy Treatment Plans. *Technology in Cancer Research and Treatment*, **2016**, 15, NP35-NP46	2.7	18
44	Incidence of CNS Injury for a Cohort of 111 Patients Treated With Proton Therapy for Medulloblastoma: LET and RBE Associations for Areas of Injury. *International Journal of Radiation Oncology Biology Physics*, **2016**, 95, 287-296	4	79
43	Poster - 16: Time-resolved diode dosimetry for in vivo proton therapy range verification: calibration through numerical modeling. *Medical Physics*, **2016**, 43, 4939-4939	4.4	
42	Attitudes of radiation oncologists toward palliative and supportive care in the United States: Report on National Membership Survey by the American Society for Radiation Oncology (ASTRO).. *Journal of Clinical Oncology*, **2016**, 34, 105-105	2.2	
41	Mechanistic Modelling of DNA Repair and Cellular Survival Following Radiation-Induced DNA Damage. *Scientific Reports*, **2016**, 6, 33290	4.9	50
40	Variable Proton Relative Biological Effectiveness: How Do We Move Forward?. *International Journal of Radiation Oncology Biology Physics*, **2016**, 95, 56-58	4	34

39	Reoptimization of Intensity Modulated Proton Therapy Plans Based on Linear Energy Transfer. *International Journal of Radiation Oncology Biology Physics*, **2016**, 96, 1097-1106	4	101
38	Validation of a GPU-based Monte Carlo code (gPMC) for proton radiation therapy: clinical cases study. *Physics in Medicine and Biology*, **2015**, 60, 2257-69	3.8	38
37	Technology for Innovation in Radiation Oncology. *International Journal of Radiation Oncology Biology Physics*, **2015**, 93, 485-92	4	43
36	Extension of TOPAS for the simulation of proton radiation effects considering molecular and cellular endpoints. *Physics in Medicine and Biology*, **2015**, 60, 5053-70	3.8	46
35	Lung cancer cell line screen links fanconi anemia/BRCA pathway defects to increased relative biological effectiveness of proton radiation. *International Journal of Radiation Oncology Biology Physics*, **2015**, 91, 1081-9	4	62
34	A phenomenological relative biological effectiveness (RBE) model for proton therapy based on all published in vitro cell survival data. *Physics in Medicine and Biology*, **2015**, 60, 8399-416	3.8	184
33	Assessing the Clinical Impact of Approximations in Analytical Dose Calculations for Proton Therapy. *International Journal of Radiation Oncology Biology Physics*, **2015**, 92, 1157-1164	4	63
32	Why Is Proton Beam Therapy So Controversial?. *Journal of the American College of Radiology*, **2015**, 12, 1318-9	3.5	3
31	Relative biological effectiveness (RBE) values for proton beam therapy. Variations as a function of biological endpoint, dose, and linear energy transfer. *Physics in Medicine and Biology*, **2014**, 59, R419-72	3.8	516
30	Lifetime increased cancer risk in mice following exposure to clinical proton beam-generated neutrons. *International Journal of Radiation Oncology Biology Physics*, **2014**, 89, 161-6	4	3
29	Quantification of proton dose calculation accuracy in the lung. *International Journal of Radiation Oncology Biology Physics*, **2014**, 89, 424-30	4	64
28	Range verification of passively scattered proton beams based on prompt gamma time patterns. *Physics in Medicine and Biology*, **2014**, 59, 4181-95	3.8	28
27	Deficiency in homologous recombination renders Mammalian cells more sensitive to proton versus photon irradiation. *International Journal of Radiation Oncology Biology Physics*, **2014**, 88, 175-81	4	81
26	Patterns of failure after proton therapy in medulloblastoma; linear energy transfer distributions and relative biological effectiveness associations for relapses. *International Journal of Radiation Oncology Biology Physics*, **2014**, 88, 655-63	4	56
25	Feasibility of Using Distal Endpoints for In-Room PET Range Verification of Proton Therapy. *IEEE Transactions on Nuclear Science*, **2013**, 60, 3290-3297	1.7	6
24	Linear energy transfer-guided optimization in intensity modulated proton therapy: feasibility study and clinical potential. *International Journal of Radiation Oncology Biology Physics*, **2013**, 87, 216-22	4	96
23	Motion interplay as a function of patient parameters and spot size in spot scanning proton therapy for lung cancer. *International Journal of Radiation Oncology Biology Physics*, **2013**, 86, 380-6	4	144
22	Proton radiography and proton computed tomography based on time-resolved dose measurements. *Physics in Medicine and Biology*, **2013**, 58, 8215-33	3.8	53

21	Geometrical splitting technique to improve the computational efficiency in Monte Carlo calculations for proton therapy. *Medical Physics*, **2013**, 40, 041718	4.4	21
20	Clinical consequences of relative biological effectiveness variations in proton radiotherapy of the prostate, brain and liver. *Physics in Medicine and Biology*, **2013**, 58, 2103-17	3.8	64
19	Feasibility of Using Distal Endpoints for In-room PET Range Verification of Proton Therapy. *IEEE Transactions on Nuclear Science*, **2013**, 60, 3290-3297	1.7	3
18	GPU-based fast Monte Carlo dose calculation for proton therapy. *Physics in Medicine and Biology*, **2012**, 57, 7783-97	3.8	111
17	Range uncertainties in proton therapy and the role of Monte Carlo simulations. *Physics in Medicine and Biology*, **2012**, 57, R99-117	3.8	728
16	Range uncertainty in proton therapy due to variable biological effectiveness. *Physics in Medicine and Biology*, **2012**, 57, 1159-72	3.8	160
15	Assessment of the risk for developing a second malignancy from scattered and secondary radiation in radiation therapy. *Health Physics*, **2012**, 103, 652-61	2.3	24
14	Preliminary Study of Proton Radiography Imaging Qualities Using GEANT4 Monte Carlo Simulations. *Nuclear Technology*, **2011**, 175, 6-10	1.4	1
13	Variations in linear energy transfer within clinical proton therapy fields and the potential for biological treatment planning. *International Journal of Radiation Oncology Biology Physics*, **2011**, 80, 1559-66	4	126
12	The PTSim and TOPAS Projects, Bringing Geant4 to the Particle Therapy Clinic. *Progress in Nuclear Science and Technology*, **2011**, 2, 912-917	0.3	10
11	Proton radiation in the management of localized cancer. *Expert Review of Medical Devices*, **2010**, 7, 275-85	3.5	15
10	Spread-out antiproton beams deliver poor physical dose distributions for radiation therapy. *Radiotherapy and Oncology*, **2010**, 95, 79-86	5.3	14
9	Field size dependence of the output factor in passively scattered proton therapy: influence of range, modulation, air gap, and machine settings. *Medical Physics*, **2009**, 36, 3205-10	4.4	29
8	Clinical implementation of full Monte Carlo dose calculation in proton beam therapy. *Physics in Medicine and Biology*, **2008**, 53, 4825-53	3.8	191
7	Patient study of in vivo verification of beam delivery and range, using positron emission tomography and computed tomography imaging after proton therapy. *International Journal of Radiation Oncology Biology Physics*, **2007**, 68, 920-34	4	286
6	Changes in tumor cell response due to prolonged dose delivery times in fractionated radiation therapy. *International Journal of Radiation Oncology Biology Physics*, **2005**, 63, 892-900	4	44
5	Monte Carlo simulations with time-dependent geometries to investigate effects of organ motion with high temporal resolution. *International Journal of Radiation Oncology Biology Physics*, **2004**, 60, 942-50	4	58
4	Foreword: Hadron therapy--from yesterday's physics laboratory to today's modern clinical routine. *Technology in Cancer Research and Treatment*, **2003**, 2, 353-4	2.7	1

3	Relative biological effectiveness (RBE) values for proton beam therapy. *International Journal of Radiation Oncology Biology Physics*, **2002**, 53, 407-21	4	619
2	Radiobiological significance of beamline dependent proton energy distributions in a spread-out Bragg peak. *Medical Physics*, **2000**, 27, 1119-26	4.4	40
1	Nuclear interactions of 160 MeV protons stopping in copper: a test of Monte Carlo nuclear models. *Medical Physics*, **1999**, 26, 2597-601	4.4	35