Jan Jakob Wilkens

List of Publications by Citations

118 papers	2,761 citations	31 h-index	49 g-index
134 ext. papers	3,246 ext. citations	3.8 avg, IF	5.2 L-index

#	Paper	IF	Citations
118	Worst case optimization: a method to account for uncertainties in the optimization of intensity modulated proton therapy. *Physics in Medicine and Biology*, **2008**, 53, 1689-700	3.8	189
117	Comparison of Gafchromic EBT2 and EBT3 films for clinical photon and proton beams. *Medical Physics*, **2012**, 39, 5257-62	4.4	171
116	A phenomenological model for the relative biological effectiveness in therapeutic proton beams. *Physics in Medicine and Biology*, **2004**, 49, 2811-25	3.8	144
115	Investigating CT to CBCT image registration for head and neck proton therapy as a tool for daily dose recalculation. *Medical Physics*, **2015**, 42, 1354-66	4.4	86
114	Modelling of the oxygen enhancement ratio for ion beam radiation therapy. *Physics in Medicine and Biology*, **2011**, 56, 3251-68	3.8	84
113	Intensity-modulated radiotherapy of nasopharyngeal carcinoma: a comparative treatment planning study of photons and protons. *Radiation Oncology*, **2008**, 3, 4	4.2	76
112	A laser-driven nanosecond proton source for radiobiological studies. *Applied Physics Letters*, **2012**, 101, 243701	3.4	75
111	Analytical linear energy transfer calculations for proton therapy. *Medical Physics*, **2003**, 30, 806-15	4.4	75
110	Laser ion acceleration for hadron therapy. *Physics-Uspekhi*, **2014**, 57, 1149-1179	2.8	72
109	IMRT treatment planning based on prioritizing prescription goals. *Physics in Medicine and Biology*, **2007**, 52, 1675-92	3.8	69
108	The effects of ultra-high dose rate proton irradiation on growth delay in the treatment of human tumor xenografts in nude mice. *Radiation Research*, **2014**, 181, 177-83	3.1	63
107	ESTRO ACROP: Technology for precision small animal radiotherapy research: Optimal use and challenges. *Radiotherapy and Oncology*, **2018**, 126, 471-478	5.3	62
106	Instrumentation for diagnostics and control of laser-accelerated proton (ion) beams. *Physica Medica* , **2014**, 30, 255-70	2.7	62
105	Application of constant vs. variable relative biological effectiveness in treatment planning of intensity-modulated proton therapy. *International Journal of Radiation Oncology Biology Physics*, **2011**, 79, 80-8	4	62
104	Radiolucent Carbon Fiber-Reinforced Pedicle Screws for Treatment of Spinal Tumors: Advantages for Radiation Planning and Follow-Up Imaging. *World Neurosurgery*, **2017**, 105, 294-301	2.1	60
103	Theoretical analysis of the dose dependence of the oxygen enhancement ratio and its relevance for clinical applications. *Radiation Oncology*, **2011**, 6, 171	4.2	54
102	Proton Minibeam Radiation Therapy Reduces Side Effects in an In Vivo Mouse Ear Model. *International Journal of Radiation Oncology Biology Physics*, **2016**, 95, 234-241	4	52

101	Radiomics in radiooncology - Challenging the medical physicist. *Physica Medica*, **2018**, 48, 27-36	2.7	49
100	Advanced treatment planning methods for efficient radiation therapy with laser accelerated proton and ion beams. *Medical Physics*, **2010**, 37, 5330-40	4.4	46
99	Future development of biologically relevant dosimetry. *British Journal of Radiology*, **2015**, 88, 20140392	3.4	43
98	Optimization of radiobiological effects in intensity modulated proton therapy. *Medical Physics*, **2005**, 32, 455-65	4.4	42
97	Direct comparison of biologically optimized spread-out bragg peaks for protons and carbon ions. *International Journal of Radiation Oncology Biology Physics*, **2008**, 70, 262-6	4	41
96	Neuro-oncology Management During the COVID-19 Pandemic With a Focus on WHO Grade III and IV Gliomas. *Neuro-Oncology*, **2020**,	1	39
95	Phantom based evaluation of CT to CBCT image registration for proton therapy dose recalculation. *Physics in Medicine and Biology*, **2015**, 60, 595-613	3.8	38
94	Reduced side effects by proton microchannel radiotherapy: study in a human skin model. *Radiation and Environmental Biophysics*, **2013**, 52, 123-33	2	38
93	Investigation of EBT2 and EBT3 films for proton dosimetry in the 4-20 MeV energy range. *Radiation and Environmental Biophysics*, **2015**, 54, 71-79	2	37
92	Impact of interfractional changes in head and neck cancer patients on the delivered dose in intensity modulated radiotherapy with protons and photons. *Physica Medica*, **2015**, 31, 266-72	2.7	36
91	Quantifying lateral tissue heterogeneities in hadron therapy. *Medical Physics*, **2007**, 34, 1506-13	4.4	36
90	Fast multifield optimization of the biological effect in ion therapy. *Physics in Medicine and Biology*, **2006**, 51, 3127-40	3.8	35
89	Validation of heat shock protein 70 as a tumor-specific biomarker for monitoring the outcome of radiation therapy in tumor mouse models. *International Journal of Radiation Oncology Biology Physics*, **2014**, 88, 694-700	4	33
88	First statement on preparation for the COVID-19 pandemic in large German Speaking University-based radiation oncology departments. *Radiation Oncology*, **2020**, 15, 74	4.2	32
87	IMRT treatment planning for prostate cancer using prioritized prescription optimization and mean-tail-dose functions. *Linear Algebra and Its Applications*, **2008**, 428, 1345-1364	0.9	31
86	A light-weight compact proton gantry design with a novel dose delivery system for broad-energetic laser-accelerated beams. *Physics in Medicine and Biology*, **2017**, 62, 5531-5555	3.8	29
85	Quantitative assessment of hypoxia kinetic models by a cross-study of dynamic 18F-FAZA and 15O-H2O in patients with head and neck tumors. *Journal of Nuclear Medicine*, **2010**, 51, 1386-94	8.9	29
84	Comparative analysis of an image-guided versus a non-image-guided setup approach in terms of delivered dose to the parotid glands in head-and-neck cancer IMRT. *International Journal of Radiation Oncology Biology Physics*, **2010**, 77, 1266-73	4	29

83	Three-dimensional LET calculations for treatment planning of proton therapy. *Zeitschrift Fur Medizinische Physik*, **2004**, 14, 41-6	7.6	29
82	Fast Biological Modeling for Voxel-based Heavy Ion Treatment Planning Using the Mechanistic Repair-Misrepair-Fixation Model and Nuclear Fragment Spectra. *International Journal of Radiation Oncology Biology Physics*, **2015**, 93, 557-68	4	27
81	Quantification of the uncertainties of a biological model and their impact on variable RBE proton treatment plan optimization. *Physica Medica*, **2017**, 36, 91-102	2.7	25
80	Scanning irradiation device for mice in vivo with pulsed and continuous proton beams. *Radiation and Environmental Biophysics*, **2011**, 50, 339-44	2	24
79	Do selective radiation dose escalation and tumour hypoxia status impact the loco-regional tumour control after radio-chemotherapy of head & neck tumours? The ESCALOX protocol. *Radiation Oncology*, **2017**, 12, 45	4.2	23
78	Modifying proton fluence spectra to generate spread-out Bragg peaks with laser accelerated proton beams. *Physics in Medicine and Biology*, **2009**, 54, N459-66	3.8	21
77	Demonstration of scan path optimization in proton therapy. *Medical Physics*, **2007**, 34, 3457-64	4.4	20
76	Deep inspiration breath-hold for left-sided breast irradiation: Analysis of dose-mass histograms and the impact of lung expansion. *Radiation Oncology*, **2019**, 14, 109	4.2	18
75	Non-uniform depth scanning for proton therapy systems employing active energy variation. *Physics in Medicine and Biology*, **2008**, 53, N149-55	3.8	18
74	SYRA3 COST Action--Microbeam radiation therapy: Roots and prospects. *Physica Medica*, **2015**, 31, 561-3	2.7	16
73	Laser-driven beam lines for delivering intensity modulated radiation therapy with particle beams. *Journal of Biophotonics*, **2012**, 5, 903-11	3.1	16
72	Dual-layer spectral computed tomography: measuring relative electron density. *European Radiology Experimental*, **2018**, 2, 20	4.5	16
71	Prioritized optimization in intensity modulated proton therapy. *Zeitschrift Fur Medizinische Physik*, **2012**, 22, 21-8	7.6	15
70	Hybrid dose calculation: a dose calculation algorithm for microbeam radiation therapy. *Physics in Medicine and Biology*, **2018**, 63, 045013	3.8	14
69	A comparison of three optimization algorithms for intensity modulated radiation therapy. *Zeitschrift Fur Medizinische Physik*, **2008**, 18, 111-9	7.6	14
68	The dosimetric impact of stabilizing spinal implants in radiotherapy treatment planning with protons and photons: standard titanium alloy vs. radiolucent carbon-fiber-reinforced PEEK systems. *Journal of Applied Clinical Medical Physics*, **2020**, 21, 6-14	2.3	13
67	Paving the Road for Modern Particle Therapy - What Can We Learn from the Experience Gained with Fast Neutron Therapy in Munich?. *Frontiers in Oncology*, **2015**, 5, 262	5.3	13
66	Reduced volume SIB-IMRT/IGRT to head and neck cancer in elderly and frail patients: outcome and toxicity. *Radiation Oncology*, **2016**, 11, 133	4.2	12

65	Dosimetric impact of different CT datasets for stereotactic treatment planning using 3D conformal radiotherapy or volumetric modulated arc therapy. *Radiation Oncology*, **2015**, 10, 249	4.2	12
64	Rapid implementation of the repair-misrepair-fixation (RMF) model facilitating online adaption of radiosensitivity parameters in ion therapy. *Physics in Medicine and Biology*, **2017**, 62, N285-N296	3.8	11
63	Increased cell survival and cytogenetic integrity by spatial dose redistribution at a compact synchrotron X-ray source. *PLoS ONE*, **2017**, 12, e0186005	3.7	11
62	Individualized radiotherapy by combining high-end irradiation and magnetic resonance imaging. *Strahlentherapie Und Onkologie*, **2016**, 192, 209-15	4.3	11
61	Dosimetric characterization of a single crystal diamond detector in X-ray beams for preclinical research. *Zeitschrift Fur Medizinische Physik*, **2018**, 28, 303-309	7.6	11
60	Variance-based sensitivity analysis of biological uncertainties in carbon ion therapy. *Physica Medica*, **2014**, 30, 583-7	2.7	11
59	A treatment planning study to assess the feasibility of laser-driven proton therapy using a compact gantry design. *Medical Physics*, **2015**, 42, 5120-9	4.4	11
58	Neoadjuvant image-guided helical intensity modulated radiotherapy of extremity sarcomas - a single center experience. *Radiation Oncology*, **2019**, 14, 2	4.2	10
57	Registration uncertainties between 3D cone beam computed tomography and different reference CT datasets in lung stereotactic body radiation therapy. *Radiation Oncology*, **2016**, 11, 142	4.2	10
56	BioXmark for high-precision radiotherapy in an orthotopic pancreatic tumor mouse model : Experiences with a liquid fiducial marker. *Strahlentherapie Und Onkologie*, **2017**, 193, 1039-1047	4.3	10
55	Speed optimized influence matrix processing in inverse treatment planning tools. *Physics in Medicine and Biology*, **2008**, 53, N157-64	3.8	10
54	Dose-compatible grating-based phase-contrast mammography on mastectomy specimens using a compact synchrotron source. *Scientific Reports*, **2018**, 8, 15700	4.9	10
53	Energy dependent track structure parametrisations for protons and carbon ions based on nanometric simulations. *European Physical Journal D*, **2015**, 69, 1	1.3	9
52	Improved normal tissue protection by proton and X-ray microchannels compared to homogeneous field irradiation. *Physica Medica*, **2015**, 31, 615-20	2.7	9
51	Radiobiological effect based treatment plan optimization with the linear quadratic model. *Zeitschrift Fur Medizinische Physik*, **2010**, 20, 188-96	7.6	9
50	A proof of principle experiment for microbeam radiation therapy at the Munich compact light source. *Radiation and Environmental Biophysics*, **2020**, 59, 111-120	2	9
49	MRI-based high-precision irradiation in an orthotopic pancreatic tumor mouse model : A treatment planning study. *Strahlentherapie Und Onkologie*, **2018**, 194, 944-952	4.3	8
48	Evaluation of radiation-related invasion in primary patient-derived glioma cells and validation with established cell lines: impact of different radiation qualities with differing LET. *Journal of Neuro-Oncology*, **2018**, 139, 583-590	4.8	8

47	Local weighting of nanometric track structure properties in macroscopic voxel geometries for particle beam treatment planning. *Physics in Medicine and Biology*, **2015**, 60, 9145-56	3.8	8
46	Systematic out-of-field secondary neutron spectrometry and dosimetry in pencil beam scanning proton therapy. *Medical Physics*, **2017**, 44, 1912-1920	4.4	7
45	Assessment of secondary radiation and radiation protection in laser-driven proton therapy. *Zeitschrift Fur Medizinische Physik*, **2015**, 25, 112-22	7.6	7
44	Dosimetric impact of tumor treating field (TTField) transducer arrays onto treatment plans for glioblastomas - a planning study. *Radiation Oncology*, **2018**, 13, 31	4.2	7
43	EUD-based biological optimization for carbon ion therapy. *Medical Physics*, **2015**, 42, 6248-57	4.4	7
42	Deep Learning Based HPV Status Prediction for Oropharyngeal Cancer Patients. *Cancers*, **2021**, 13,	6.6	6
41	Beam size limit for pencil minibeam radiotherapy determined from side effects in an in-vivo mouse ear model. *PLoS ONE*, **2019**, 14, e0221454	3.7	5
40	Application of variance-based uncertainty and sensitivity analysis to biological modeling in carbon ion treatment plans. *Medical Physics*, **2019**, 46, 437-447	4.4	5
39	Prioritized efficiency optimization for intensity modulated proton therapy. *Physics in Medicine and Biology*, **2016**, 61, 8249-8265	3.8	4
38	Neoadjuvant stereotactic radiosurgery for intracerebral metastases of solid tumors (NepoMUC): a phase I dose escalation trial. *Cancer Communications*, **2019**, 39, 73	9.4	4
37	Adjuvant versus early salvage radiotherapy: outcome of patients with prostate cancer treated with postoperative radiotherapy after radical prostatectomy. *Radiation Oncology*, **2019**, 14, 198	4.2	4
36	The impact of CT window settings on the contouring of a moving target: A phantom study. *Clinical Radiology*, **2014**, 69, e331-6	2.9	4
35	Interobserver variability of patient positioning using four different CT datasets for image registration in lung stereotactic body radiotherapy. *Strahlentherapie Und Onkologie*, **2017**, 193, 831-839	4.3	4
34	Early detection of radiation-induced lung damage with X-ray dark-field radiography in mice. *European Radiology*, **2021**, 31, 4175-4183	8	4
33	MRI based neuroanatomical segmentation in breast cancer patients: leptomeningeal carcinomatosis vs. oligometastatic brain disease vs. multimetastastic brain disease. *Radiation Oncology*, **2019**, 14, 170	4.2	3
32	Report on planning comparison of VMAT, IMRT and helical tomotherapy for the ESCALOX-trial pre-study. *Radiation Oncology*, **2020**, 15, 253	4.2	3
31	Modeling RBE-weighted dose variations in irregularly moving abdominal targets treated with carbon ion beams. *Medical Physics*, **2020**, 47, 2768-2778	4.4	3
30	Master of Science (MSc) Program in Radiation Biology: An Interdepartmental Course Bridging the Gap between Radiation-Related Preclinical and Clinical Disciplines to Prepare Next-Generation Medical Scientists. *Frontiers in Oncology*, **2017**, 7, 226	5.3	3

29	Corrigendum to Instrumentation for diagnostics and control of laser-accelerated proton (ion) beams [Phys Med 30 (2014) 255–270]. *Physica Medica*, **2015**, 31, 117	2.7	3
28	A systematic review of antiproton radiotherapy. *Frontiers in Physics*, **2014**, 1,	3.9	3
27	A dose error evaluation study for 4D dose calculations. *Physics in Medicine and Biology*, **2014**, 59, 6401-15	3.8	3
26	A comprehensive Monte Carlo study of out-of-field secondary neutron spectra in a scanned-beam proton therapy gantry room. *Zeitschrift Fur Medizinische Physik*, **2021**, 31, 215-228	7.6	3
25	Development and clinical evaluation of an ionization chamber array with 3.5 mm pixel pitch for quality assurance in advanced radiotherapy techniques. *Medical Physics*, **2016**, 43, 2283	4.4	3
24	Matching the reaction-diffusion simulation to dynamic [F]FMISO PET measurements in tumors: extension to a flow-limited oxygen-dependent model. *Physiological Measurement*, **2017**, 38, 188-204	2.9	2
23	Simulation and measurement of microbeam dose distribution in lung tissue. *Physica Medica*, **2020**, 75, 77-82	2.7	2
22	Implications of free breathing motion assessed by 4D-computed tomography on the delivered dose in radiotherapy for esophageal cancer. *Medical Dosimetry*, **2015**, 40, 378-82	1.3	2
21	Measurements to predict the time of target replacement of a helical tomotherapy. *Journal of Applied Clinical Medical Physics*, **2011**, 12, 3596	2.3	2
20	Dosimetric effects of energy spectrum uncertainties in radiation therapy with laser-driven particle beams. *Physics in Medicine and Biology*, **2012**, 57, N47-53	3.8	2
19	Introduction to Radiotherapy with Photon and Electron Beams and Treatment Planning from Conformal Radiotherapy to IMRT. *AIP Conference Proceedings*, **2007**,	0	2
18	Technical and dosimetric realization of in vivo x-ray microbeam irradiations at the Munich Compact Light Source. *Medical Physics*, **2020**, 47, 5183-5193	4.4	2
17	Early and late toxicity profiles of patients receiving immediate postoperative radiotherapy versus salvage radiotherapy for prostate cancer after prostatectomy. *Strahlentherapie Und Onkologie*, **2019**, 195, 131-144	4.3	2
16	Prediction of multi-criteria optimization (MCO) parameter efficiency in volumetric modulated arc therapy (VMAT) treatment planning using machine learning (ML). *Physica Medica*, **2021**, 81, 102-113	2.7	2
15	Clinical microbeam radiation therapy with a compact source: specifications of the line-focus X-ray tube. *Physics and Imaging in Radiation Oncology*, **2020**, 14, 74-81	3.1	1
14	SU-E-T-52: Evaluation of EBT2 and EBT3 Films for Dosimetry in Laser-Driven Ion Accelerators. *Medical Physics*, **2013**, 40, 215-215	4.4	1
13	Approximation of dose quality indicator values in multi-criteria optimized (MCO) volumetric modulated arc therapy (VMAT) treatment planning using trilinear dose interpolation. *Zeitschrift Fur Medizinische Physik*, **2020**, 30, 315-324	7.6	1
12	Establishment of Microbeam Radiation Therapy at a Small-Animal Irradiator. *International Journal of Radiation Oncology Biology Physics*, **2021**, 109, 626-636	4	1

11	Physical Optimization **2006**, 31-45		1
10	In-vivo X-ray dark-field computed tomography for the detection of radiation-induced lung damage in mice. *Physics and Imaging in Radiation Oncology*, **2021**, 20, 11-16	3.1	0
9	X-ray Dark-Field CT for Early Detection of Radiation-induced Lung Injury in a Murine Model.. *Radiology*, **2022**, 212332	20.5	0
8	SU-D-BRE-05: Feasibility and Limitations of Laser-Driven Proton Therapy: A Treatment Planning Study. *Medical Physics*, **2014**, 41, 112-112	4.4	
7	WE-D-BRE-07: Variance-Based Sensitivity Analysis to Quantify the Impact of Biological Uncertainties in Particle Therapy. *Medical Physics*, **2014**, 41, 494-494	4.4	
6	SU-E-T-415: An Ionization Chamber Array with High Spatial Resolution for External Beam Radiotherapy. *Medical Physics*, **2014**, 41, 321-321	4.4	
5	SU-F-T-217: A Comprehensive Monte-Carlo Study of Out-Of-Field Secondary Neutron Spectra in a Scanned-Beam Proton Therapy Treatment Room. *Medical Physics*, **2016**, 43, 3512-3512	4.4	
4	Sparse dose painting based on a dual-pass kinetic-oxygen mapping of dynamic PET images. *Lecture Notes in Computer Science*, **2011**, 14, 484-91	0.9	
3	The Role of Particle Therapy for the Treatment of Skull Base Tumors and Tumors of the Central Nervous System (CNS). *Topics in Magnetic Resonance Imaging*, **2019**, 28, 49-61	2.3	
2	A Five-Year report on the conception and establishment of the MSc Radiation Biology at the Technical University of Munich. *International Journal of Radiation Biology*, **2021**, 97, 256-264	2.9	
1	Deep Learning Based GTV Delineation and Progression Free Survival Risk Score Prediction for Head and Neck Cancer Patients. *Lecture Notes in Computer Science*, **2022**, 150-159	0.9	