

# CITATION REPORT

List of articles citing

## Range uncertainties in proton therapy and the role of Monte Carlo simulations

DOI: 10.1088/0031-9155/57/11/r99

Physics in Medicine and Biology, 2012, 57, R99-117.

**Source:** <https://exaly.com/paper-pdf/54353480/citation-report.pdf>

**Version:** 2024-04-28

This report has been generated based on the citations recorded by exaly.com for the above article. For the latest version of this publication list, visit the link given above.

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

#	Paper	IF	Citations
859	TOPAS: an innovative proton Monte Carlo platform for research and clinical applications. <b>2012</b> , 39, 6818-37		435
858	Feasibility of Using Distal Endpoints for In-room PET Range Verification of Proton Therapy. <b>2013</b> , 60, 3290-3297		3
857	Image-guided radiotherapy: from current concept to future perspectives. <b>2012</b> , 9, 688-99		269
856	GPU-based fast Monte Carlo dose calculation for proton therapy. <i>Physics in Medicine and Biology</i> , <b>2012</b> , 57, 7783-97	3.8	111
855	Multi-scenario based robust intensity-modulated proton therapy (IMPT) plans can account for set-up errors more effectively in terms of normal tissue sparing than planning target volume (PTV) based intensity-modulated photon plans in the head and neck region. <b>2013</b> , 8, 145		16
854	Application of failure mode and effects analysis to treatment planning in scanned proton beam radiotherapy. <b>2013</b> , 8, 127		56
853	An algorithm to assess the need for clinical Monte Carlo dose calculation for small proton therapy fields based on quantification of tissue heterogeneity. <b>2013</b> , 40, 081704		23
852	On the Determination of the Mean Excitation Energy of Water. <b>2013</b> , 65, 63-77		11
851	Interplay effects in proton scanning for lung: a 4D Monte Carlo study assessing the impact of tumor and beam delivery parameters. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, 4137-56	3.8	108
850	Advancing (proton) radiation therapy. <b>2013</b> , 87, 871-3		6
849	The effects of mapping CT images to Monte Carlo materials on GEANT4 proton simulation accuracy. <b>2013</b> , 40, 041701		3
848	Quantification of dose perturbations induced by external and internal accessories in ocular proton therapy and evaluation of their dosimetric impact. <b>2013</b> , 40, 061708		10
847	Verifying Radiation Treatment in Proton Therapy via PET Imaging of the Induced Positron-Emitters. <b>2013</b> , 65, 111-127		
846	Stochastics of Energy Loss and Biological Effects of Heavy Ions in Radiation Therapy. <b>2013</b> , 65, 1-38		11
845	On the Accuracy of Stopping Power Codes and Ion Ranges Used for Hadron Therapy. <b>2013</b> , 65, 39-61		13
844	Machine learning-based patient specific prompt-gamma dose monitoring in proton therapy. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, 4563-77	3.8	46
843	Feasibility of proton-activated implantable markers for proton range verification using PET. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, 7497-512	3.8	13

842	In vivo proton range verification: a review. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, R131-60	3.8	316
841	Feasibility of Using Distal Endpoints for In-Room PET Range Verification of Proton Therapy. <b>2013</b> , 60, 3290-3297		6
840	Oncology Scan Improvements in Dose Calculation, Deformable Registration, and MR-Guided Radiation Delivery. <b>2013</b> , 86, 395-397		5
839	Physics controversies in proton therapy. <b>2013</b> , 23, 88-96		105
838	Controversies in clinical trials in proton radiotherapy: the present and the future. <b>2013</b> , 23, 127-33		14
837	Biological considerations when comparing proton therapy with photon therapy. <b>2013</b> , 23, 77-87		65
836	Evolution of technology to optimize the delivery of proton therapy: the third generation. <b>2013</b> , 23, 142-8		21
835	Clinical application of in-room positron emission tomography for in vivo treatment monitoring in proton radiation therapy. <b>2013</b> , 86, 183-9		63
834	The Dielectric Formalism for Inelastic Processes in High-Energy Ion-Matter Collisions. <b>2013</b> , 65, 165-201		13
833	The clinical impact of uncertainties in the mean excitation energy of human tissues during proton therapy. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, 887-902	3.8	36
832	Macro Monte Carlo for dose calculation of proton beams. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, 2027-49	3.8	11
831	Determination of elemental tissue composition following proton treatment using positron emission tomography. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, 3815-35	3.8	12
830	Two-dimensional measurement of the prompt-gamma distribution for proton dose distribution monitoring. <b>2013</b> , 63, 1385-1389		4
829	Physical and biological factors determining the effective proton range. <b>2013</b> , 40, 111716		41
828	Increasing maximum tumor dose to manage range uncertainties in IMPT treatment planning. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, 7329-41	3.8	8
827	A Monte Carlo-based treatment planning tool for proton therapy. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, 2471-90	3.8	71
826	Experimental validation of the TOPAS Monte Carlo system for passive scattering proton therapy. <b>2013</b> , 40, 121719		75
825	Proton radiography and proton computed tomography based on time-resolved dose measurements. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, 8215-33	3.8	53

824 . 2013,

823	Geometrical splitting technique to improve the computational efficiency in Monte Carlo calculations for proton therapy. <b>2013</b> , 40, 041718		21
822	Energy- and time-resolved detection of prompt gamma-rays for proton range verification. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, L37-49	3.8	83
821	Measurement of characteristic prompt gamma rays emitted from oxygen and carbon in tissue-equivalent samples during proton beam irradiation. <i>Physics in Medicine and Biology</i> , <b>2013</b> , 58, 5827-31	3.8	53
820	Integration of a real-time tumor monitoring system into gated proton spot-scanning beam therapy: an initial phantom study using patient tumor trajectory data. <b>2013</b> , 40, 071729		30
819	Filtered backprojection proton CT reconstruction along most likely paths. <b>2013</b> , 40, 031103		61
818	Proton therapy verification with PET imaging. <b>2013</b> , 3, 731-40		57
817	Feasibility of proton transmission-beam stereotactic ablative radiotherapy versus photon stereotactic ablative radiotherapy for lung tumors: a dosimetric and feasibility study. <b>2014</b> , 9, e98621		5
816	There is Evidence for the Superiority of Protons and Heavy Ions, Pro. <b>2014</b> , 277-289		1
815	Evaluation of permanent alopecia in pediatric medulloblastoma patients treated with proton radiation. <b>2014</b> , 9, 220		20
814	Design optimisation of a TOF-based collimated camera prototype for online hadrontherapy monitoring. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 7653-74	3.8	52
813	Relative biological effectiveness of the 60-MeV therapeutic proton beam at the Institute of Nuclear Physics (IFJ PAN) in Kraków, Poland. <b>2014</b> , 53, 745-54		9
812	Novel radiotherapy techniques for involved-field and involved-node treatment of mediastinal Hodgkin lymphoma: when should they be considered and which questions remain open?. <b>2014</b> , 190, 864-6, 868-71		15
811	Recommendations for the referral of patients for proton-beam therapy, an Alberta Health Services report: a model for Canada?. <b>2014</b> , 21, 251-62		16
810	Feasibility study of using statistical process control to customized quality assurance in proton therapy. <b>2014</b> , 41, 092105		10
809	The image quality of ion computed tomography at clinical imaging dose levels. <b>2014</b> , 41, 111908		22
808	Comparison of x ray computed tomography number to proton relative linear stopping power conversion functions using a standard phantom. <b>2014</b> , 41, 061705		9
807	Improved proton computed tomography by dual modality image reconstruction. <b>2014</b> , 41, 031904		15

806	Tissue decomposition from dual energy CT data for MC based dose calculation in particle therapy. <b>2014</b> , 41, 061714		75
805	Factors influencing the accuracy of beam range estimation in proton therapy using prompt gamma emission. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 4427-41	3.8	30
804	Automation and uncertainty analysis of a method for in-vivo range verification in particle therapy. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 5903-19	3.8	39
803	Range verification of passively scattered proton beams based on prompt gamma time patterns. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 4181-95	3.8	28
802	Experimentally validated pencil beam scanning source model in TOPAS. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 6859-73	3.8	32
801	Range assessment in particle therapy based on prompt $\gamma$ timing measurements. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 5399-422	3.8	118
800	Beam-specific planning volumes for scattered-proton lung radiotherapy. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 4549-66	3.8	3
799	Proton range monitoring with in-beam PET: Monte Carlo activity predictions and comparison with cyclotron data. <b>2014</b> , 30, 559-69		32
798	Real-time proton beam range monitoring by means of prompt-gamma detection with a collimated camera. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 1327-38	3.8	46
797	Experimental verification of ion stopping power prediction from dual energy CT data in tissue surrogates. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 83-96	3.8	120
796	First full-beam PET acquisitions in proton therapy with a modular dual-head dedicated system. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 43-60	3.8	63
795	TPS(PET)-A TPS-based approach for in vivo dose verification with PET in proton therapy. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 1-21	3.8	52
794	Detecting prompt gamma emission during proton therapy: the effects of detector size and distance from the patient. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 2325-40	3.8	27
793	Proton-counting radiography for proton therapy: a proof of principle using CMOS APS technology. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 2569-81	3.8	35
792	Range verification for eye proton therapy based on proton-induced x-ray emissions from implanted metal markers. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 2623-38	3.8	3
791	Experimental investigations on carbon ion scanning radiography using a range telescope. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 3041-57	3.8	26
790	A stoichiometric calibration method for dual energy computed tomography. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 2059-88	3.8	96
789	A Monte Carlo tool for raster-scanning particle therapy dose computation. <b>2014</b> , 489, 012013		1

788	Neonization method for stopping, mean excitation energy, straggling, and for total and differential ionization cross sections of CH <sub>4</sub> , NH <sub>3</sub> , H <sub>2</sub> O and FH by impact of heavy projectiles. <b>2014</b> , 47, 015201		15
787	Choosing wisely: the American Society for Radiation Oncology's top 5 list. <b>2014</b> , 4, 349-55		75
786	Site-specific range uncertainties caused by dose calculation algorithms for proton therapy. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 4007-31	3.8	84
785	The impact of tracking system properties on the most likely path estimation in proton CT. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, N197-210	3.8	16
784	Prompt gamma imaging of proton pencil beams at clinical dose rate. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 5849-71	3.8	85
783	Relative biological effectiveness (RBE) values for proton beam therapy. Variations as a function of biological endpoint, dose, and linear energy transfer. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, R419-72	3.8	516
782	The influence of patient positioning uncertainties in proton radiotherapy on proton range and dose distributions. <b>2014</b> , 41, 091711		18
781	Promise and pitfalls of heavy-particle therapy. <b>2014</b> , 32, 2855-63		77
780	Optimization of GATE and PHITS Monte Carlo code parameters for uniform scanning proton beam based on simulation with FLUKA general-purpose code. <b>2014</b> , 336, 45-54		10
779	Monte Carlo simulations will change the way we treat patients with proton beams today. <b>2014</b> , 87, 20140293		20
778	Outcomes of proton therapy for patients with functional pituitary adenomas. <b>2014</b> , 90, 532-9		73
777	In-beam PET imaging for on-line adaptive proton therapy: an initial phantom study. <i>Physics in Medicine and Biology</i> , <b>2014</b> , 59, 3373-88	3.8	33
776	Core physics competencies for proton therapy training of radiation oncology and medical physics residents and fellows. <b>2014</b> , 88, 971-2		2
775	Quantification of proton dose calculation accuracy in the lung. <b>2014</b> , 89, 424-30		64
774	Development and application of tools for Monte Carlo based simulations in a particle beam radiotherapy facility. <b>2014</b> , 83 Pt B, 155-8		12
773	Evaluation of a metal artifact reduction algorithm in CT studies used for proton radiotherapy treatment planning. <b>2014</b> , 15, 4857		20
772	Impact of spot size on plan quality of spot scanning proton radiosurgery for peripheral brain lesions. <b>2014</b> , 41, 121705		22
771	Dosimetric study of uniform scanning proton therapy planning for prostate cancer patients with a metal hip prosthesis, and comparison with volumetric-modulated arc therapy. <b>2014</b> , 15, 4611		20

770	Projection-based deformable registration for tomographic imaging in ion beam therapy. <b>2014,</b>		1
769	First acquisitions of realistic Proton Therapy treatments delivered on an anthropomorphic phantom with a prompt gamma camera. <b>2014,</b>		
768	Monte Carlo comparison of x-ray and proton CT for range calculations of proton therapy beams. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 7585-99	3.8	34
767	An advanced image processing method to improve the spatial resolution of ion radiographies. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 8525-47	3.8	21
766	Expected proton signal sizes in the PRAVDA Range Telescope for proton Computed Tomography. <b>2015</b> , 10, P05013-P05013		10
765	Dose ratio proton radiography using the proximal side of the Bragg peak. <b>2015</b> , 42, 1871-83		8
764	Vision 20/20: Positron emission tomography in radiation therapy planning, delivery, and monitoring. <b>2015</b> , 42, 7153-68		44
763	Three-dimensional gamma criterion for patient-specific quality assurance of spot scanning proton beams. <b>2015</b> , 16, 381-388		8
762	Technical Note: On the calculation of stopping-power ratio for stoichiometric calibration in proton therapy. <b>2015</b> , 42, 5252-7		6
761	Using CBCT for pretreatment range check in proton therapy: a phantom study for prostate treatment by anterior-posterior beam. <b>2015</b> , 16, 472-483		4
760	Experimental observation of acoustic emissions generated by a pulsed proton beam from a hospital-based clinical cyclotron. <b>2015</b> , 42, 7090-7		39
759	Ionoacoustic characterization of the proton Bragg peak with submillimeter accuracy. <b>2015</b> , 42, 567-74		75
758	Imaging particle beams for cancer treatment. <b>2015</b> , 68, 28-33		23
757	Validation of an in-vivo proton beam range check method in an anthropomorphic pelvic phantom using dose measurements. <b>2015</b> , 42, 1936-47		12
756	Prompt gamma imaging of a pencil beam with a high efficiency compton camera at a clinical proton therapy facility. <b>2015,</b>		
755	A pencil beam approach to proton computed tomography. <b>2015</b> , 42, 6610-24		8
754	Passive proton therapy vs. IMRT planning study with focal boost for prostate cancer. <b>2015</b> , 10, 213		11
753	Implementation of spot scanning dose optimization and dose calculation for helium ions in Hyperion. <b>2015</b> , 42, 5157-66		12

752	Developing a phenomenological model of the proton trajectory within a heterogeneous medium required for proton imaging. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 5071-82	3.8	33
751	Evaluation of proton inelastic reaction models in Geant4 for prompt gamma production during proton radiotherapy. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 7617-35	3.8	11
750	Development of Two-dimensional Prompt-gamma Measurement System for Verification of Proton Dose Distribution. <b>2015</b> , 26, 42		1
749	Spot Weight Adaptation for Moving Target in Spot Scanning Proton Therapy. <b>2015</b> , 5, 119		1
748	Range Verification Methods in Particle Therapy: Underlying Physics and Monte Carlo Modeling. <b>2015</b> , 5, 150		77
747	Tumour Movement in Proton Therapy: Solutions and Remaining Questions: A Review. <i>Cancers</i> , <b>2015</b> , 7, 1143-53	6.6	38
746	A fast GPU-based Monte Carlo simulation of proton transport with detailed modeling of nonelastic interactions. <b>2015</b> , 42, 2967-78		70
745	Dual-resolution dose assessments for proton beamlet using MCNPX 2.6.0. <b>2015</b> , 116, 237-240		4
744	Assessing the Clinical Impact of Approximations in Analytical Dose Calculations for Proton Therapy. <b>2015</b> , 92, 1157-1164		63
743	Characterization and validation of a Monte Carlo code for independent dose calculation in proton therapy treatments with pencil beam scanning. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 8601-19	3.8	44
742	Imaging of prompt gamma rays emitted during delivery of clinical proton beams with a Compton camera: feasibility studies for range verification. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 7085-99	3.8	82
741	Patient-specific stopping power calibration for proton therapy planning based on single-detector proton radiography. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 1901-17	3.8	51
740	Noise evaluation of Compton camera imaging for proton therapy. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 1845-63	3.8	35
739	Is there a clinical benefit with a smooth compensator design compared with a plunged compensator design for passive scattered protons?. <b>2015</b> , 40, 37-43		1
738	Phantom based evaluation of CT to CBCT image registration for proton therapy dose recalculation. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 595-613	3.8	38
737	Validation of a GPU-based Monte Carlo code (gPMC) for proton radiation therapy: clinical cases study. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 2257-69	3.8	38
736	Proton tracking for medical imaging and dosimetry. <b>2015</b> , 10,		15
735	Characterizing a proton beam scanning system for Monte Carlo dose calculation in patients. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 633-45	3.8	38



734	A Recommendation on How to Analyze In-Room PET for In Vivo Proton Range Verification Using a Distal PET Surface Method. <b>2015</b> , 14, 320-5		9
733	Proton radiobiology. <i>Cancers</i> , <b>2015</b> , 7, 353-81	6.6	153
732	Technique for comprehensive head and neck irradiation using 3-dimensional conformal proton therapy. <b>2015</b> , 40, 333-9		2
731	Mapping (15)O production rate for proton therapy verification. <b>2015</b> , 92, 453-9		19
730	Towards Achieving the Full Clinical Potential of Proton Therapy by Inclusion of LET and RBE Models. <i>Cancers</i> , <b>2015</b> , 7, 460-80	6.6	43
729	Analytical computation of prompt gamma ray emission and detection for proton range verification. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 4915-46	3.8	24
728	Experimental depth dose curves of a 67.5 MeV proton beam for benchmarking and validation of Monte Carlo simulation. <b>2015</b> , 42, 4199-210		5
727	Prompt-Gamma Monitoring of Proton- and Carbon-Therapy. Combined Development of Time-of-Flight Collimated- and Compton-Cameras. <b>2015</b> , 127, 1445-1448		
726	Technology for Innovation in Radiation Oncology. <b>2015</b> , 93, 485-92		43
725	Intensity modulated proton therapy. <b>2015</b> , 88, 20150195		36
724	Comparing the quality of passively-scattered proton and photon tomotherapy plans for brain and head and neck disease sites. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 2167-77	3.8	1
723	Clinical implementation and range evaluation of in vivo PET dosimetry for particle irradiation in patients with primary glioma. <b>2015</b> , 115, 179-85		30
722	Improved calibration of mass stopping power in low density tissue for a proton pencil beam algorithm. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 4243-61	3.8	6
721	Measurement of prompt gamma profiles in inhomogeneous targets with a knife-edge slit camera during proton irradiation. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 4849-71	3.8	41
720	Investigating the limits of PET/CT imaging at very low true count rates and high random fractions in ion-beam therapy monitoring. <b>2015</b> , 42, 3979-91		19
719	Evaluation of resistive-plate-chamber-based TOF-PET applied to in-beam particle therapy monitoring. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, N187-208	3.8	2
718	Evaluation of a multistage CdZnTe Compton camera for prompt $\gamma$ imaging for proton therapy. <b>2015</b> , 785, 163-169		35
717	Proton beam therapy: the next disruptive innovation in healthcare?. <b>2015</b> , 91, 241-3		4

7 <sup>16</sup>	Bone marrow sparing in intensity modulated proton therapy for cervical cancer: Efficacy and robustness under range and setup uncertainties. <b>2015</b> , 115, 373-8		25
7 <sup>15</sup>	Simulation of the secondary electrons energy deposition produced by proton beams in PMMA: influence of the target electronic excitation description. <b>2015</b> , 69, 1		7
7 <sup>14</sup>	A framework for implementation of organ effect models in TOPAS with benchmarks extended to proton therapy. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 5037-52	3.8	4
7 <sup>13</sup>	A simulation study on proton computed tomography (CT) stopping power accuracy using dual energy CT scans as benchmark. <b>2015</b> , 54, 1638-42		47
7 <sup>12</sup>	Proton dose calculation on scatter-corrected CBCT image: Feasibility study for adaptive proton therapy. <b>2015</b> , 42, 4449-59		75
7 <sup>11</sup>	Treatment planning aspects and Monte Carlo methods in proton therapy. <b>2015</b> , 30, 1540022		2
7 <sup>10</sup>	Dosimetric feasibility of intensity modulated proton therapy in a transverse magnetic field of 1.5 T. <i>Physics in Medicine and Biology</i> , <b>2015</b> , 60, 5955-69	3.8	34
7 <sup>09</sup>	Novel applications of proton therapy in breast carcinoma. <b>2016</b> , 5, 52		11
7 <sup>08</sup>	Development of Dual-mode Signal Processing Module for Multi-slit Prompt-gamma Camera. <b>2016</b> , 27, 37		1
7 <sup>07</sup>	Commissioning of a relative stopping power to Hounsfield unit calibration curve for a Mevion proton radiation treatment unit. <b>2016</b> ,		1
7 <sup>06</sup>	Protons, Photons, and the Prostate - Is There Emerging Evidence in the Ongoing Discussion on Particle Therapy for the Treatment of Prostate Cancer?. <b>2016</b> , 6, 8		11
7 <sup>05</sup>	Assessment of Geant4 Prompt-Gamma Emission Yields in the Context of Proton Therapy Monitoring. <b>2016</b> , 6, 10		15
7 <sup>04</sup>	Compton Camera and Prompt Gamma Ray Timing: Two Methods for In Vivo Range Assessment in Proton Therapy. <b>2016</b> , 6, 80		28
7 <sup>03</sup>	Experimental Comparison of Knife-Edge and Multi-Parallel Slit Collimators for Prompt Gamma Imaging of Proton Pencil Beams. <b>2016</b> , 6, 156		7
7 <sup>02</sup>	Investigation into the effects of high-Z nano materials in proton therapy. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 4537-50	3.8	24
7 <sup>01</sup>	Fast and accurate sensitivity analysis of IMPT treatment plans using Polynomial Chaos Expansion. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 4646-64	3.8	21
7 <sup>00</sup>	Feasibility of hydrogel fiducial markers for in vivo proton range verification using PET. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 2162-76	3.8	6
6 <sup>99</sup>	Pencil beam proton radiography using a multilayer ionization chamber. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 4078-87	3.8	42

698	Quantitative assessment of anatomical change using a virtual proton depth radiograph for adaptive head and neck proton therapy. <b>2016</b> , 17, 427-440		16
697	An end-to-end assessment of range uncertainty in proton therapy using animal tissues. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 8010-8024	3.8	5
696	DoPET: an in-treatment monitoring system for proton therapy at 62 MeV. <b>2016</b> , 11, C12029-C12029		4
695	A general method to derive tissue parameters for Monte Carlo dose calculation with multi-energy CT. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 8044-8069	3.8	45
694	Acoustic time-of-flight for proton range verification in water. <b>2016</b> , 43, 5213		17
693	Electronic stopping power calculation for water under the Lindhard formalism for application in proton computed tomography. <b>2016</b> ,		
692	Feasibility of MRI-only treatment planning for proton therapy in brain and prostate cancers: Dose calculation accuracy in substitute CT images. <b>2016</b> , 43, 4634		53
691	A robust empirical parametrization of proton stopping power using dual energy CT. <b>2016</b> , 43, 5547		32
690	Proton computed tomography using a 1D silicon diode array. <b>2016</b> , 43, 5758		2
689	Estimating patient specific uncertainty parameters for adaptive treatment re-planning in proton therapy using in vivo range measurements and Bayesian inference: application to setup and stopping power errors. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 6281-96	3.8	
688	Commissioning and initial experience with the first clinical gantry-mounted proton therapy system. <b>2016</b> , 17, 24-40		22
687	A simulation study investigating a Cherenkov material for use with the prompt gamma range verification in proton therapy. <b>2016</b> , 24, 565-82		
686	Fast multipurpose Monte Carlo simulation for proton therapy using multi- and many-core CPU architectures. <b>2016</b> , 43, 1700		50
685	Implementation of an analytical solution to lateral dose prediction in a proton therapy treatment planning system. <b>2016</b> , 118, S8-S9		
684	Long-Term Outcomes After Proton Beam Therapy for Sinonasal Squamous Cell Carcinoma. <b>2016</b> , 95, 368-376		45
683	An integrated system for the online monitoring of particle therapy treatment accuracy. <b>2016</b> , 824, 198-201		14
682	Range prediction for tissue mixtures based on dual-energy CT. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, N268-75	3.8	41
681	The price of robustness; impact of worst-case optimization on organ-at-risk dose and complication probability in intensity-modulated proton therapy for oropharyngeal cancer patients. <b>2016</b> , 120, 56-62		32

680	From 2D to 3D: Proton radiography and proton CT in proton therapy: A simulation study. <b>2016</b> , 118, S10-S11		
679	Filtered back-projection reconstruction for attenuation proton CT along most likely paths. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 3258-78	3.8	10
678	Intracranial Stereotactic Radiation Therapy With Charged Particle Beams: An Opportunity to Regain the Momentum. <b>2016</b> , 95, 52-55		7
677	[Robust treatment planning in proton therapy]. <b>2016</b> , 20, 523-9		0
676	Tests of a Compton imaging prototype in a monoenergetic 4.44 MeV photon field— benchmark setup for prompt gamma-ray imaging devices. <b>2016</b> , 11, P06009-P06009		26
675	Fast reconstruction of low dose proton CT by sinogram interpolation. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 5868-82	3.8	19
674	Nuclear physics in particle therapy: a review. <b>2016</b> , 79, 096702		143
673	Benefit of particle therapy in re-irradiation of head and neck patients. Results of a multicentric in silico ROCOCO trial. <b>2016</b> , 121, 387-394		31
672	Required transition from research to clinical application: Report on the 4D treatment planning workshops 2014 and 2015. <b>2016</b> , 32, 874-82		32
671	Towards clinical application: prompt gamma imaging of passively scattered proton fields with a knife-edge slit camera. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 7881-7905	3.8	17
670	Variable RBE in proton therapy: comparison of different model predictions and their influence on clinical-like scenarios. <b>2016</b> , 11, 68		73
669	Inter-comparison of relative stopping power estimation models for proton therapy. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 8085-8104	3.8	5
668	lonoacoustic tomography of the proton Bragg peak in combination with ultrasound and optoacoustic imaging. <b>2016</b> , 6, 29305		30
667	Technical Note: Range verification system using edge detection method for a scintillator and a CCD camera system. <b>2016</b> , 43, 1754		2
666	Large area polycrystalline diamond detectors for online hadron therapy beam tagging applications. <b>2016</b> ,		1
665	Minimizing treatment planning errors in proton therapy using failure mode and effects analysis. <b>2016</b> , 43, 2904-2910		6
664	Proton radiography to improve proton therapy treatment. <b>2016</b> , 11, C01004-C01004		2
663	Radiological protection in ion beam radiotherapy: practical guidance for clinical use of new technology. <b>2016</b> , 45, 138-47		2

662	Development of proton CT imaging system using plastic scintillator and CCD camera. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 4156-67	3.8	11
661	On- and off-line monitoring of ion beam treatment. <b>2016</b> , 809, 113-119		35
660	A new silicon tracker for proton imaging and dosimetry. <b>2016</b> , 831, 362-366		9
659	Review of 3D image data calibration for heterogeneity correction in proton therapy treatment planning. <b>2016</b> , 39, 379-90		1
658	First clinical application of a prompt gamma based in vivo proton range verification system. <b>2016</b> , 118, 232-7		146
657	Fractionated Lung IMPT Treatments: Sensitivity to Setup Uncertainties and Motion Effects Based on Single-Field Homogeneity. <b>2016</b> , 15, 689-96		10
656	Current and future accelerator technologies for charged particle therapy. <b>2016</b> , 809, 96-104		31
655	Dual energy CT in radiotherapy: Current applications and future outlook. <b>2016</b> , 119, 137-44		93
654	Optimization of GATE and PHITS Monte Carlo code parameters for spot scanning proton beam based on simulation with FLUKA general-purpose code. <b>2016</b> , 367, 14-25		5
653	Dosimetric impact of the low-dose envelope of scanned proton beams at a ProBeam facility: comparison of measurements with TPS and MC calculations. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 958-73	3.8	16
652	Beam configuration selection for robust intensity-modulated proton therapy in cervical cancer using Pareto front comparison. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 1780-94	3.8	11
651	Evaluation of Robustness to Setup and Range Uncertainties for Head and Neck Patients Treated With Pencil Beam Scanning Proton Therapy. <b>2016</b> , 95, 154-162		25
650	Results From the Imaging and Radiation Oncology Core Houston's Anthropomorphic Phantoms Used for Proton Therapy Clinical Trial Credentialing. <b>2016</b> , 95, 242-248		27
649	Development and evaluation of a short-range applicator for treating superficial moving tumors with respiratory-gated spot-scanning proton therapy using real-time image guidance. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 1515-31	3.8	13
648	Analytical calculation of proton linear energy transfer in voxelized geometries including secondary protons. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 1705-21	3.8	20
647	Simultaneous measurements of absorbed dose and linear energy transfer in therapeutic proton beams. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 1765-79	3.8	13
646	Incorporating the effect of fractionation in the evaluation of proton plan robustness to setup errors. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 413-29	3.8	29
645	Characterization of the microbunch time structure of proton pencil beams at a clinical treatment facility. <i>Physics in Medicine and Biology</i> , <b>2016</b> , 61, 2432-56	3.8	27

644	Sensitivity study of prompt gamma imaging of scanned beam proton therapy in heterogeneous anatomies. <b>2016</b> , 118, 562-7		8
643	Automated Monte Carlo Simulation of Proton Therapy Treatment Plans. <b>2016</b> , 15, NP35-NP46		18
642	A comparison of two prompt gamma imaging techniques with collimator-based cameras for range verification in proton therapy. <b>2017</b> , 137, 144-150		9
641	Low material budget floating strip Micromegas for ion transmission radiography. <b>2017</b> , 845, 210-214		1
640	Development of a high resolution voxelised head phantom for medical physics applications. <b>2017</b> , 33, 182-188		16
639	Inclusion of a variable RBE into proton and photon plan comparison for various fractionation schedules in prostate radiation therapy. <b>2017</b> , 44, 810-822		40
638	A new approach to integrate GPU-based Monte Carlo simulation into inverse treatment plan optimization for proton therapy. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 289-305	3.8	8
637	Spectroscopic study of prompt-gamma emission for range verification in proton therapy. <b>2017</b> , 34, 7-17		28
636	The design of the 300 MeV proton microprobe system in Harbin. <b>2017</b> , 404, 9-14		4
635	Evaluating Intensity Modulated Proton Therapy Relative to Passive Scattering Proton Therapy for Increased Vertebral Column Sparing in Craniospinal Irradiation in Growing Pediatric Patients. <b>2017</b> , 98, 37-46		16
634	Feasibility study of using fall-off gradients of early and late PET scans for proton range verification. <b>2017</b> , 44, 1734-1746		6
633	Initial development of goCMC: a GPU-oriented fast cross-platform Monte Carlo engine for carbon ion therapy. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 3682-3699	3.8	14
632	Proton Computed Tomography: iterative image reconstruction and dose evaluation. <b>2017</b> , 12, C01034-C01034		4
631	Proton therapy of prostate cancer by anterior-oblique beams: implications of setup and anatomy variations. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 1644-1660	3.8	18
630	Total variation superiorization in dual-energy CT reconstruction for proton therapy treatment planning. <b>2017</b> , 33, 044013		4
629	A study of the beam-specific interplay effect in proton pencil beam scanning delivery in lung cancer. <b>2017</b> , 56, 531-540		32
628	Predicting Patient-specific Dosimetric Benefits of Proton Therapy for Skull-base Tumors Using a Geometric Knowledge-based Method. <b>2017</b> , 97, 1087-1094		16
627	Proton therapy treatment monitoring with in-beam PET: Investigating space and time activity distributions. <b>2017</b> , 861, 71-76		4

626	A benchmarking method to evaluate the accuracy of a commercial proton monte carlo pencil beam scanning treatment planning system. <b>2017</b> , 18, 44-49		36
625	Prompt Gamma Imaging for In Vivo Range Verification of Pencil Beam Scanning Proton Therapy. <b>2017</b> , 99, 210-218		88
624	Use of Protons for Radiation Therapy. <b>2017</b> , 115-140		1
623	Dose calculation for spot scanning proton therapy with the application of a range shifter. <b>2017</b> , 3, 035019		2
622	TOPAS Simulation of the Mevion S250 compact proton therapy unit. <b>2017</b> , 18, 88-95		18
621	Preliminary study of a new gamma imager for on-line proton range monitoring during proton radiotherapy. <b>2017</b> , 12, C05009-C05009		1
620	Application of fluence field modulation to proton computed tomography for proton therapy imaging. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 6026-6043	3.8	16
619	Proton tracking in a high-granularity Digital Tracking Calorimeter for proton CT purposes. <b>2017</b> , 860, 51-61		15
618	A simulation study for radiation treatment planning based on the atomic physics of the proton-boron fusion reaction. <b>2017</b> , 70, 629-639		3
617	A model-based iterative reconstruction algorithm DIRA using patient-specific tissue classification via DECT for improved quantitative CT in dose planning. <b>2017</b> , 44, 2345-2357		8
616	The potential of dual-energy CT to reduce proton beam range uncertainties. <b>2017</b> , 44, 2332-2344		74
615	Feasibility study of a novel multi-strip silicon detector for use in proton therapy range verification quality assurance. <b>2017</b> , 106, 378-384		4
614	Prototype system for proton beam range measurement based on gamma electron vertex imaging. <b>2017</b> , 857, 82-97		10
613	Investigation of time-resolved proton radiography using x-ray flat-panel imaging system. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 1905-1919	3.8	13
612	Prompt Gamma Rays Detected With a BGO Block Compton Camera Reveal Range Deviations of Therapeutic Proton Beams. <b>2017</b> , 1, 76-86		21
611	Limitations of analytical dose calculations for small field proton radiosurgery. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 246-257	3.8	6
610	Definitive proton beam therapy for adenoid cystic carcinoma of the nasopharynx involving the base of skull. <b>2017</b> , 65, 38-44		21
609	Clinical Implementation of Dual-energy CT for Proton Treatment Planning on Pseudo-monoenergetic CT scans. <b>2017</b> , 97, 427-434		68

608	Effect of Anatomic Changes on Pencil Beam Scanned Proton Dose Distributions for Cranial and Extracranial Tumors. <b>2017</b> , 97, 616-623		23
607	Nanoscale Insights into Ion-Beam Cancer Therapy. <b>2017</b> ,		33
606	Treatment Planning Systems and Hadron Therapy Practice in France. <b>2017</b> , 467-494		
605	Propagation of Swift Protons in Liquid Water and Generation of Secondary Electrons in Biomaterials. <b>2017</b> , 61-98		1
604	Monte Carlo-Based Modeling of Secondary Particle Tracks Generated by Intermediate- and Low-Energy Protons in Water. <b>2017</b> , 99-119		
603	Water equivalent path length calculations using scatter-corrected head and neck CBCT images to evaluate patients for adaptive proton therapy. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 59-72	3.8	14
602	Determination of mean ionization potential using magnetic resonance imaging for the reduction of proton beam range uncertainties: theory and application. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 8521-8535	3.8	5
601	An empirical formula for isotopic yield in Fe + p spallation reactions. <b>2017</b> , 44, 125101		4
600	Analytical probabilistic modeling of RBE-weighted dose for ion therapy. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 8959-8982	3.8	8
599	A robust optimisation approach accounting for the effect of fractionation on setup uncertainties. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 8178-8196	3.8	10
598	A Monte-Carlo study to assess the effect of 1.5 T magnetic fields on the overall robustness of pencil-beam scanning proton radiotherapy plans for prostate cancer. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 8470-8482	3.8	10
597	Abstract ID: 113 Accurate extraction of tissues parameters for Monte Carlo simulations using multi-energy CT. <b>2017</b> , 42, 23-24		
596	Dual-energy CT based proton range prediction in head and pelvic tumor patients. <b>2017</b> , 125, 526-533		57
595	Study for online range monitoring with the interaction vertex imaging method. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 9220-9239	3.8	9
594	A comparison of relative proton stopping power measurements across patient size using dual- and single-energy CT. <b>2017</b> , 56, 1465-1471		14
593	The optimal balance between quality and efficiency in proton radiography imaging technique at various proton beam energies: A Monte Carlo study. <b>2017</b> , 41, 141-146		3
592	An approximate analytical solution of the Bethe equation for charged particles in the radiotherapeutic energy range. <b>2017</b> , 7, 9781		16
591	Empowering Intensity Modulated Proton Therapy Through Physics and Technology: An Overview. <b>2017</b> , 99, 304-316		33



590	Combined influence of CT random noise and HU-RSP calibration curve nonlinearities on proton range systematic errors. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 8226-8245	3.8	9
589	Proton therapy in mediastinal Hodgkin lymphoma: moving from dosimetric prediction to clinical evidence. <b>2017</b> , 28, 2049-2050		4
588	Impact of parametric uncertainty on estimation of the energy deposition into an irradiated brain tumor. <b>2017</b> , 348, 139-150		3
587	SP-0379: SBRT for spine and non-spine bone metastases: what role in routine practice?. <b>2017</b> , 123, S205		
586	Optimization of dual-energy CT acquisitions for proton therapy using projection-based decomposition. <b>2017</b> , 44, 4548-4558		7
585	SP-0380: How to reduce range uncertainties. <b>2017</b> , 123, S205		
584	SP-0378: State of the art multimodality treatment of rectal cancer. <b>2017</b> , 123, S205		
583	. <b>2017</b> , 64, 1891-1896		3
582	A prospective study of proton reirradiation for recurrent and secondary soft tissue sarcoma. <b>2017</b> , 124, 271-276		18
581	A Bayesian approach to solve proton stopping powers from noisy multi-energy CT data. <b>2017</b> , 44, 5293-5302		20
580	Dosimetric evaluation of a commercial proton spot scanning Monte-Carlo dose algorithm: comparisons against measurements and simulations. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 7659-7687	3.8	81
579	Particle Radiation Therapy for Liver Tumors: Simulation and Treatment Planning. <b>2017</b> , 107-119		
578	Effect of DIR uncertainty on prostate passive-scattering proton therapy dose accumulation. <b>2017</b> , 39, 113-120		4
577	A novel and fast method for proton range verification using a step wedge and 2D scintillator. <b>2017</b> , 44, 4409-4414		9
576	Registration of pencil beam proton radiography data with X-ray CT. <b>2017</b> , 44, 5393-5401		9
575	Independent dose verification system with Monte Carlo simulations using TOPAS for passive scattering proton therapy at the National Cancer Center in Korea. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 7598-7616	3.8	11
574	Time-resolved diode dosimetry calibration through Monte Carlo modeling for in vivo passive scattered proton therapy range verification. <b>2017</b> , 18, 200-205		2
573	Comprehensive clinical commissioning and validation of the RayStation treatment planning system for proton therapy with active scanning and passive treatment techniques. <b>2017</b> , 43, 15-24		21

572	Sensitivity of a prompt-gamma slit-camera to detect range shifts for proton treatment verification. <b>2017</b> , 125, 534-540		15
571	Differences in Normal Tissue Response in the Esophagus Between Proton and Photon Radiation Therapy for Non-Small Cell Lung Cancer Using In Vivo Imaging Biomarkers. <b>2017</b> , 99, 1013-1020		3
570	Pre-treatment patient-specific stopping power by combining list-mode proton radiography and x-ray CT. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 6836-6852	3.8	23
569	Energy deposition measurements of single <sup>1</sup> H, <sup>4</sup> He and <sup>12</sup> C ions of therapeutic energies in a silicon pixel detector. <b>2017</b> , 12, P04025-P04025		15
568	Comprehensive analysis of proton range uncertainties related to stopping-power-ratio estimation using dual-energy CT imaging. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 7056-7074	3.8	32
567	Experimental assessment of proton dose calculation accuracy in inhomogeneous media. <b>2017</b> , 38, 10-15		29
566	Investigation of real tissue water equivalent path lengths using an efficient dose extinction method. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, 5640-5651	3.8	5
565	High-dose-rate brachytherapy of rhabdomyosarcoma limited to the external auditory canal. <b>2017</b> , 16, 181-185		3
564	Impact of Real-Time Image Gating on Spot Scanning Proton Therapy for Lung Tumors: A Simulation Study. <b>2017</b> , 97, 173-181		21
563	Dosimetric characterization of carbon fiber stabilization devices for post-operative particle therapy. <b>2017</b> , 44, 18-25		20
562	Submillimeter ionoacoustic range determination for protons in water at a clinical synchrocyclotron. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 62, L20-L30	3.8	39
561	A preliminary Monte Carlo study for the treatment head of a carbon-ion radiotherapy facility using TOPAS. <b>2017</b> , 153, 04018		1
560	Comparison between proton boron fusion therapy (PBFT) and boron neutron capture therapy (BNCT): a monte carlo study. <b>2017</b> , 8, 39774-39781		16
559	Correction of Prompt Gamma Distribution for Improving Accuracy of Beam Range Determination in Inhomogeneous Phantom. <b>2017</b> , 28, 207		
558	Individualized 4-dimensional computed tomography proton treatment for pancreatic tumors. <b>2017</b> , 8, 675-682		3
557	LET spectra behind high-density titanium and stainless steel hip implants irradiated with a therapeutic proton beam. <b>2018</b> , 110, 7-13		2
556	Material elemental decomposition in dual and multi-energy CT via a sparsity-dictionary approach for proton stopping power ratio calculation. <b>2018</b> , 45, 1491-1503		9
555	A large area diamond-based beam tagging hodoscope for ion therapy monitoring. <b>2018</b> , 170, 09005		7

554	Technical Note: Defining cyclotron-based clinical scanning proton machines in a FLUKA Monte Carlo system. <b>2018</b> , 45, 963-970		6
553	Improvement of single detector proton radiography by incorporating intensity of time-resolved dose rate functions. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 63, 015030	3.8	11
552	TOPAS Monte Carlo model of MD anderson scanning proton beam for simulation studies in proton therapy. <b>2018</b> , 4, 037001		3
551	Ionizing radiation-induced acoustics for radiotherapy and diagnostic radiology applications. <b>2018</b> , 45, e707-e721		25
550	Impact of joint statistical dual-energy CT reconstruction of proton stopping power images: Comparison to image- and sinogram-domain material decomposition approaches. <b>2018</b> , 45, 2129-2142		17
549	Measurement of nuclear reaction cross sections by using Cherenkov radiation toward high-precision proton therapy. <b>2018</b> , 8, 2570		11
548	Ex vivo validation of a stoichiometric dual energy CT proton stopping power ratio calibration. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 055016	3.8	24
547	CeBr scintillators for He prompt gamma spectroscopy: Results from a Monte Carlo optimization study. <b>2018</b> , 45, 1622-1630		4
546	3D prompt gamma imaging for proton beam range verification. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 035019	3.8	61
545	Progress towards a semiconductor Compton camera for prompt gamma imaging during proton beam therapy for range and dose verification. <b>2018</b> , 13, C01036-C01036		5
544	Theoretical and experimental comparison of proton and helium-beam radiography using silicon pixel detectors. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 035037	3.8	14
543	Tolerance design of patient-specific range QA using the DMAIC framework in proton therapy. <b>2018</b> , 45, 520-528		1
542	Construction and First Tests of an in-beam PET Demonstrator Dedicated to the Ballistic Control of Hadrontherapy Treatments With 65 MeV Protons. <b>2018</b> , 2, 51-60		11
541	Using gEUD based plan analysis method to evaluate proton vs. photon plans for lung cancer radiation therapy. <b>2018</b> , 19, 204-210		2
540	Physics Essentials of Particle Therapy. <b>2018</b> , 1-16		
539	Primary Spine Tumors. <b>2018</b> , 329-346		1
538	Proof of principle of helium-beam radiography using silicon pixel detectors for energy deposition measurement, identification, and tracking of single ions. <b>2018</b> , 45, 817-829		15
537	Density overwrites of internal tumor volumes in intensity modulated proton therapy plans for mobile lung tumors. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 035023	3.8	11

536	Improved proton CT imaging using a bismuth germanium oxide scintillator. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 035030	3.8	10
535	Helium CT: Monte Carlo simulation results for an ideal source and detector with comparison to proton CT. <b>2018</b> , 45, 3264-3274		14
534	Inter-centre variability of CT-based stopping-power prediction in particle therapy: Survey-based evaluation. <b>2018</b> , 6, 25-30		34
533	Proton therapy technology evolution in the clinic: impact on radiation protection. <b>2018</b> , 47, 177-186		7
532	Robust Proton Treatment Planning: Physical and Biological Optimization. <b>2018</b> , 28, 88-96		57
531	Characterization of a multilayer ionization chamber prototype for fast verification of relative depth ionization curves and spread-out-Bragg-peaks in light ion beam therapy. <b>2018</b> , 45, 2266-2277		6
530	Comparison of CT-number parameterization models for stoichiometric CT calibration in proton therapy. <b>2018</b> , 47, 42-49		4
529	Online proton therapy monitoring: clinical test of a Silicon-photodetector-based in-beam PET. <b>2018</b> , 8, 4100		72
528	A low-count reconstruction algorithm for Compton-based prompt gamma imaging. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 085013	3.8	3
527	Validation of proton stopping power ratio estimation based on dual energy CT using fresh tissue samples. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 63, 015012	3.8	38
526	Evaluation of Stopping-Power Prediction by Dual- and Single-Energy Computed Tomography in an Anthropomorphic Ground-Truth Phantom. <b>2018</b> , 100, 244-253		45
525	Efficiency improvement in proton dose calculations with an equivalent restricted stopping power formalism. <i>Physics in Medicine and Biology</i> , <b>2017</b> , 63, 015019	3.8	1
524	Review of medical radiography and tomography with proton beams. <b>2018</b> , 81, 016701		68
523	Proton craniospinal irradiation during the third trimester of pregnancy. <b>2018</b> , 8, 213-216		3
522	Performance of a hybrid Monte Carlo-Pencil Beam dose algorithm for proton therapy inverse planning. <b>2018</b> , 45, 846-862		12
521	Analytical dose modeling for preclinical proton irradiation of millimetric targets. <b>2018</b> , 45, 470-478		9
520	Acoustic-based proton range verification in heterogeneous tissue: simulation studies. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 025018	3.8	14
519	Experimental validation of two dual-energy CT methods for proton therapy using heterogeneous tissue samples. <b>2018</b> , 45, 48-59		49

518	Prompt-gamma monitoring in hadrontherapy: A review. <b>2018</b> , 878, 58-73	105
517	Early Axial Growth Outcomes of Pediatric Patients Receiving Proton Craniospinal Irradiation. <b>2018</b> , 40, 574-579	4
516	Correction of Geometrical Effects of a Knife-Edge Slit Camera for Prompt Gamma-Based Range Verification in Proton Therapy. <b>2018</b> , 2, 25	2
515	Reply to Z. Liao et al and R. Rengan et al. <b>2018</b> , 36, 2005-2006	1
514	Image guidance in proton therapy for lung cancer. <b>2018</b> , 7, 160-170	5
513	Advanced proton beam dosimetry part II: Monte Carlo pencil beam-based planning for lung cancer. <b>2018</b> , 7, 114-121	24
512	Proton Relative Biological Effectiveness - Uncertainties and Opportunities. <b>2018</b> , 5, 2-14	33
511	Advances in the use of motion management and image guidance in radiation therapy treatment for lung cancer. <b>2018</b> , 10, S2437-S2450	22
510	Considerations when treating lung cancer with passive scatter or active scanning proton therapy. <b>2018</b> , 7, 210-215	9
509	Double-Field Hadrontherapy Treatment Monitoring With the INSIDE In-Beam PET Scanner: Proof of Concept. <b>2018</b> , 2, 588-593	16
508	Development and Performance Evaluation of a Prompt Gamma Imaging System for Real-time Proton Therapy Monitoring. <b>2018</b> ,	1
507	In-room performance evaluation of a novel online charged secondary particles monitor of light ions PT treatments. <b>2018</b> ,	
506	Computational models and tools. <b>2018</b> , 45, e1073-e1085	2
505	PRaVDA: The first solid-state system for proton computed tomography. <b>2018</b> , 55, 149-154	19
504	Proton beam therapy for cancer in the era of precision medicine. <b>2018</b> , 11, 136	39
503	Multi-Modality Imaging. <b>2018</b> ,	
502	Use of Photon Scattering Interactions in Diagnosis and Treatment of Disease. <b>2018</b> , 135-158	
501	Perturbations of radiation field caused by titanium dental implants in pencil proton beam therapy. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 215020	3.8 3

500	New Digital Plug and Imaging Sensor for a Proton Therapy Monitoring System Based on Positron Emission Tomography. <b>2018</b> , 18,		15
499	Implementation of planar proton minibeam radiation therapy using a pencil beam scanning system: A proof of concept study. <b>2018</b> , 45, 5305-5316		15
498	Validation and application of a fast Monte Carlo algorithm for assessing the clinical impact of approximations in analytical dose calculations for pencil beam scanning proton therapy. <b>2018</b> , 45, 5631-5642		20
497	Revisiting the single-energy CT calibration for proton therapy treatment planning: a critical look at the stoichiometric method. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 235011	3.8	18
496	Electric Field from a Proton Beam in Biological Tissues for Proton Radiotherapy. <b>2018</b> , 10,		0
495	Two-dimensional noise reconstruction in proton computed tomography using distance-driven filtered back-projection of simulated projections. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 215009	3.8	15
494	Toward a new treatment planning approach accounting for in vivo proton range verification. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 215025	3.8	11
493	LET-weighted doses effectively reduce biological variability in proton radiotherapy planning. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 225009	3.8	29
492	Proton radiography with a commercial range telescope detector using dedicated post processing methods. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 205016	3.8	8
491	The impact of secondary fragments on the image quality of helium ion imaging. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 195016	3.8	19
490	The impact of dual- and multi-energy CT on proton pencil beam range uncertainties: a Monte Carlo study. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 195012	3.8	10
489	High accuracy proton relative stopping power measurement. <b>2018</b> , 436, 99-106		5
488	Water Equivalent Thickness Estimation Via Sparse Deconvolution of Proton Radiography Data. <b>2018</b> ,		1
487	Patient positioning verification for proton therapy using proton radiography. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 245009	3.8	9
486	Gamma electron vertex imaging for in-vivo beam-range measurement in proton therapy: Experimental results. <b>2018</b> , 113, 114101		1
485	Study on the Dose Uncertainties in the Lung during Passive Proton Irradiation with a Proton Beam Range Compensator. <b>2018</b> , 72, 1369-1378		
484	Probabilistic dose distribution from interfractional motion in carbon ion radiation therapy for prostate cancer shows rectum sparing with moderate target coverage degradation. <b>2018</b> , 13, e0203289		5
483	Evaluation of a Novel Multi-slit Collimated Detection System for Prompt Gamma-Ray Imaging During Proton Beam Therapy. <b>2018</b> ,		1

482	Experimental fluence-modulated proton computed tomography by pencil beam scanning. <b>2018</b> , 45, 3287-3296	12	
481	Proton range shift analysis on brain pseudo-CT generated from T1 and T2 MR. <b>2018</b> , 57, 1521-1531		20
480	Deriving the mean excitation energy map from dual-energy and proton computed tomography. <b>2018</b> , 6, 20-24		2
479	Mid-range probing-towards range-guided particle therapy. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 13NT01	3.8	4
478	Calculation of water equivalent ratios for various materials at proton energies ranging 10-500 MeV using MCNP, FLUKA, and GEANT4 Monte Carlo codes. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 155010	3.8	1
477	Intensity-modulated radiotherapy for whole pelvis irradiation in prostate cancer: A dosimetric and plan robustness study between photons and protons. <b>2018</b> , 6, 11-19		4
476	Asymptomatic Late-phase Radiographic Changes Among Chest-Wall Patients Are Associated With a Proton RBE Exceeding 1.1. <b>2018</b> , 101, 809-819		49
475	Current State of Image Guidance in Radiation Oncology: Implications for PTV Margin Expansion and Adaptive Therapy. <b>2018</b> , 28, 238-247		13
474	Optimized I-values for use with the Bragg additivity rule and their impact on proton stopping power and range uncertainty. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 165007	3.8	20
473	A beam model for focused proton pencil beams. <b>2018</b> , 52, 27-32		14
472	Unsupervised classification of tissues composition for Monte Carlo dose calculation. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 15NT01	3.8	1
471	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?. <b>2018</b> , 57, 1259-1264		13
470	Technical Note: Using dual step wedge and 2D scintillator to achieve highly precise and robust proton range quality assurance. <b>2018</b> , 45, 2947-2951		2
469	Monte Carlo simulation tool for online treatment monitoring in hadrontherapy with in-beam PET: A patient study. <b>2018</b> , 51, 71-80		23
468	Reassessment of stopping power ratio uncertainties caused by mean excitation energies using a water-based formalism. <b>2018</b> , 45, 3361-3370		9
467	Validation and clinical implementation of an accurate Monte Carlo code for pencil beam scanning proton therapy. <b>2018</b> , 19, 558-572		31
466	Proton therapy for adults with mediastinal lymphomas: the International Lymphoma Radiation Oncology Group guidelines. <b>2018</b> , 132, 1635-1646		52
465	Proton range verification in inhomogeneous tissue: Treatment planning system vs. measurement vs. Monte Carlo simulation. <b>2018</b> , 13, e0193904		3

464	A comprehensive theoretical comparison of proton imaging set-ups in terms of spatial resolution. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 63, 135013	3.8	16
463	Scintillating Fiber Devices for Particle Therapy Applications. <b>2018</b> , 65, 2054-2060		1
462	Clinical examination of proton pencil beam scanning on a moving anthropomorphic lung phantom. <b>2019</b> , 44, 122-129		7
461	Technical Note: Monte Carlo methods to comprehensively evaluate the robustness of 4D treatments in proton therapy. <b>2019</b> , 46, 4676-4684		14
460	Harmonization of proton treatment planning for head and neck cancer using pencil beam scanning: first report of the IPACS collaboration group. <b>2019</b> , 58, 1720-1730		3
459	A theoretical investigation of adequate range uncertainty margins in proton treatment planning to preserve tumor control probability. <b>2019</b> , 58, 1446-1450		3
458	Dual-Energy Computed Tomography to Assess Intra- and Inter-Patient Tissue Variability for Proton Treatment Planning of Patients With Brain Tumor. <b>2019</b> , 105, 504-513		13
457	A Monte Carlo based radiation response modelling framework to assess variability of clinical RBE in proton therapy. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 225020	3.8	12
456	The impact of proton LET/RBE modeling and robustness analysis on base-of-skull and pediatric craniopharyngioma proton plans relative to VMAT. <b>2019</b> , 58, 1765-1774		5
455	Initial Experience of Patient-Specific QA for Wobbling and Line-Scanning Proton Therapy at Samsung Medical Center. <b>2019</b> , 30, 14		1
454	A proton imaging system using a volumetric liquid scintillator: a preliminary study. <b>2019</b> , 5,		6
453	Experimental evaluation of depth-encoding absorber designs for prompt-gamma Compton imaging in proton therapy. <b>2019</b> , 127, 106145		
452	Dosimetric validation of Monte Carlo and analytical dose engines with raster-scanning H, He, C, and O ion-beams using an anthropomorphic phantom. <b>2019</b> , 64, 123-131		12
451	Range and dose verification in proton therapy using proton-induced positron emitters and recurrent neural networks (RNNs). <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 175009	3.8	10
450	[Proton therapy for head and neck squamous cell carcinomas: From physics to clinic]. <b>2019</b> , 23, 439-448		2
449	Estimation of respiratory phases during proton radiotherapy from a 4D-CT and Prompt gamma detection profiles. <b>2019</b> , 64, 33-39		0
448	Offline imaging of positron emitters induced by therapeutic helium, carbon and oxygen ion beams with a full-ring PET/CT scanner: experiments in reference targets. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 225016	3.8	1
447	Towards fast and robust 4D optimization for moving tumors with scanned proton therapy. <b>2019</b> , 46, 5434-5443		12



446	Deep Convolution Neural Network (DCNN) Multiplane Approach to Synthetic CT Generation From MR images-Application in Brain Proton Therapy. <b>2019</b> , 105, 495-503		36
445	Proton therapy for non-small cell lung cancer: the road ahead. <b>2019</b> , 8, S202-S212		11
444	Technical Note: Machine learning approaches for range and dose verification in proton therapy using proton-induced positron emitters. <b>2019</b> , 46, 5748-5757		9
443	Mitigating inherent noise in Monte Carlo dose distributions using dilated U-Net. <b>2019</b> , 46, 5790-5798		8
442	Effects of the Bragg peak degradation due to lung tissue in proton therapy of lung cancer patients. <b>2019</b> , 14, 183		8
441	Evaluation of a deep learning-based pelvic synthetic CT generation technique for MRI-based prostate proton treatment planning. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 205022	3.8	23
440	Impact of uncertainties in range and RBE on small field proton therapy. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 205005	3.8	4
439	ML-EM algorithm for dose estimation using PET in proton therapy. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 175011	3.8	6
438	Practical robustness evaluation in radiotherapy - A photon and proton-proof alternative to PTV-based plan evaluation. <b>2019</b> , 141, 267-274		45
437	Adaptive step size algorithm to increase efficiency of proton macro Monte Carlo dose calculation. <b>2019</b> , 14, 165		4
436	Review and performance of the Dose Profiler, a particle therapy treatments online monitor. <b>2019</b> , 65, 84-93		12
435	Report of the AAPM TG-256 on the relative biological effectiveness of proton beams in radiation therapy. <b>2019</b> , 46, e53-e78		98
434	Evaluation of the ray-casting analytical algorithm for pencil beam scanning proton therapy. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 065021	3.8	13
433	Introducing Proton Track-End Objectives in Intensity Modulated Proton Therapy Optimization to Reduce Linear Energy Transfer and Relative Biological Effectiveness in Critical Structures. <b>2019</b> , 103, 747-757		18
432	Iterative optimization of relative stopping power by single detector based multi-projection proton radiography. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 065022	3.8	6
431	Regularised patient-specific stopping power calibration for proton therapy planning based on proton radiographic images. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 065008	3.8	19
430	Investigation of Optimal Physical Parameters for Precise Proton Irradiation of Orthotopic Tumors in Small Animals. <b>2019</b> , 103, 1241-1250		2
429	Contour scanning, multi-leaf collimation and the combination thereof for proton pencil beam scanning. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 64, 015002	3.8	8

428	Comparison of pancreatic respiratory motion management with three abdominal corsets for particle radiation therapy: Case study. <b>2019</b> , 20, 111-119		5
427	Experimental comparison of proton CT and dual energy x-ray CT for relative stopping power estimation in proton therapy. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 165002	3.8	30
426	Improving single-event proton CT by removing nuclear interaction events within the energy/range detector. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 15NT01	3.8	11
425	Medical Applications of the ALPIDE Detector. <b>2019</b> , 5, 128		
424	Inter-patient variations of radiation-induced normal-tissue changes in Gd-EOB-DTPA-enhanced hepatic MRI scans during fractionated proton therapy. <b>2019</b> , 18, 113-119		1
423	MRI-based treatment planning for proton radiotherapy: dosimetric validation of a deep learning-based liver synthetic CT generation method. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 145015	3.8	37
422	Prediction of image noise contributions in proton computed tomography and comparison to measurements. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 145016	3.8	15
421	Results from the experimental evaluation of CeBr scintillators for He prompt gamma spectroscopy. <b>2019</b> , 46, 3615-3626		6
420	Design optimization of a pixel-based range telescope for proton computed tomography. <b>2019</b> , 63, 87-97		8
419	Characterization of prompt gamma ray emission for in vivo range verification in particle therapy: A simulation study. <b>2019</b> , 62, 20-32		4
418	Determination of proton stopping power ratio with dual-energy CT in 3D-printed tissue/air cavity surrogates. <b>2019</b> , 46, 3245-3253		3
417	Processing of prompt gamma-ray timing data for proton range measurements at a clinical beam delivery. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 105023	3.8	21
416	Investigation of in vivo beam range verification in carbon ion therapy using the Doppler Shift Effect of prompt gamma: A Monte Carlo simulation study. <b>2019</b> , 162, 72-81		1
415	Dependence of LET on material and its impact on current RBE model. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 135022	3.8	3
414	How rapid advances in imaging are defining the future of precision radiation oncology. <b>2019</b> , 120, 779-790		28
413	Impact of machine log-files uncertainties on the quality assurance of proton pencil beam scanning treatment delivery. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 095021	3.8	5
412	Analytical simulator of proton radiography and tomography for different detector configurations. <b>2019</b> , 59, 92-99		8
411	A novel range-verification method using ionoacoustic wave generated from spherical gold markers for particle-beam therapy: a simulation study. <b>2019</b> , 9, 4011		5

410	pGPUMCD: an efficient GPU-based Monte Carlo code for accurate proton dose calculations. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 085018	3.8	3
409	Dosimetric accuracy and radiobiological implications of ion computed tomography for proton therapy treatment planning. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 125008	3.8	23
408	Individual Field Simultaneous Optimization (IFSO) in spot scanning proton therapy of head and neck cancers. <b>2019</b> , 44, 375-378		6
407	Applied nuclear physics at the new high-energy particle accelerator facilities. <b>2019</b> , 800, 1-37		27
406	Photoacoustic dose monitoring in clinical high-energy photon beams. <b>2019</b> , 5, 035028		3
405	Impact of setup and range uncertainties on TCP and NTCP following VMAT or IMPT of oropharyngeal cancer patients. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 095001	3.8	3
404	Correlations between the shifts in prompt gamma emission profiles and the changes in daily target coverage during simulated pencil beam scanning proton therapy. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 085009	3.8	5
403	Robustness Analysis for External Beam Radiation Therapy Treatment Plans: Describing Uncertainty Scenarios and Reporting Their Dosimetric Consequences. <b>2019</b> , 9, 200-207		15
402	Effects of transverse heterogeneities on the most likely path of protons. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 065003	3.8	6
401	A proton primer to stereotactic lung radiotherapy. <b>2019</b> , 3, 16-16		
400	. <b>2019</b> ,		
399	A New Potential Method for Proton Radiography. <b>2019</b> ,		
398	Dosimetry calculations of involved and noninvolved organs in proton therapy of liver cancer: a simulation study. <b>2019</b> , 30, 1		7
397	A New Method to Reconstruct in 3D the Emission Position of the Prompt Gamma Rays following Proton Beam Irradiation. <b>2019</b> , 9, 18820		3
396	gPET: a GPU-based, accurate and efficient Monte Carlo simulation tool for PET. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 245002	3.8	4
395	Validation of the RayStation Monte Carlo dose calculation algorithm using a realistic lung phantom. <b>2019</b> , 20, 127-137		7
394	Future Prospects for Particle Therapy Accelerators. <b>2019</b> , 10, 49-92		3
393	Optimal modality selection in external beam radiotherapy. <b>2019</b> , 36, 361-380		3

392	All the fun of the FAIR: fundamental physics at the facility for antiproton and ion research. <b>2019</b> , 94, 033001		42
391	A single detector energy-resolved proton radiography system: a proof of principle study by Monte Carlo simulations. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 025016	3.8	3
390	Validation of GATE Monte Carlo code for simulation of proton therapy using National Institute of Standards and Technology library data. <b>2019</b> , 18, 38-45		4
389	Online adaption approaches for intensity modulated proton therapy for head and neck patients based on cone beam CTs and Monte Carlo simulations. <i>Physics in Medicine and Biology</i> , <b>2018</b> , 64, 015004	3.8	26
388	Medical applications of silicon photomultipliers. <b>2019</b> , 926, 118-128		30
387	Experimental implementation of a joint statistical image reconstruction method for proton stopping power mapping from dual-energy CT data. <b>2019</b> , 46, 273-285		9
386	Feasibility of 4DCBCT-based proton dose calculation: An ex vivo porcine lung phantom study. <b>2019</b> , 29, 249-261		10
385	The Promise of Proton Therapy for Central Nervous System Malignancies. <b>2019</b> , 84, 1000-1010		6
384	Application of variance-based uncertainty and sensitivity analysis to biological modeling in carbon ion treatment plans. <b>2019</b> , 46, 437-447		5
383	Nuclear interactions and medicine. <b>2019</b> , 134, 1		
382	Log file based Monte Carlo calculations for proton pencil beam scanning therapy. <i>Physics in Medicine and Biology</i> , <b>2019</b> , 64, 035014	3.8	7
381	Gel dosimetry for three dimensional proton range measurements in anthropomorphic geometries. <b>2019</b> , 29, 162-172		10
380	An Improved Method of Total Variation Superiorization Applied to Reconstruction in Proton Computed Tomography. <b>2020</b> , 39, 294-307		7
379	Characterization of monolithic CMOS pixel sensor chip with ion beams for application in particle computed tomography. <b>2020</b> , 958, 162626		3
378	Monte Carlo computer simulation of a camera system for proton beam range verification in cancer treatment. <b>2020</b> , 102, 978-991		3
377	Development and Validation of Single Field Multi-Ion Particle Therapy Treatments. <b>2020</b> , 106, 194-205		21
376	. <b>2020</b> , 4, 218-232		15
375	Bragg peak characteristics of proton beams within therapeutic energy range and the comparison of stopping power using the GATE Monte Carlo simulation and the NIST data. <b>2020</b> , 19, 173-181		2

374	An Approach for Optimizing Prompt Gamma Photon-Based Range Estimation in Proton Therapy Using Cramér-Rao Theory. <b>2020</b> , 4, 161-169		2
373	. <b>2020</b> , 4, 147-160		8
372	Proton RBE dependence on dose in the setting of hypofractionation. <b>2020</b> , 93, 20190291		6
371	Proton therapy delivery: what is needed in the next ten years?. <b>2020</b> , 93, 20190359		13
370	Is an analytical dose engine sufficient for intensity modulated proton therapy in lung cancer?. <b>2020</b> , 93, 20190583		3
369	A novel design of proton computed tomography detected by multiple-layer ionization chamber with strip chambers: A feasibility study with Monte Carlo simulation. <b>2020</b> , 47, 614-625		1
368	Sparse deconvolution of proton radiography data to estimate water equivalent thickness maps. <b>2020</b> , 47, 509-517		6
367	Upgrading an Integrating Carbon-Ion Transmission Imaging System With Active Scanning Beam Delivery Toward Low Dose Ion Imaging. <b>2020</b> , 4, 262-268		6
366	Status and innovations in pre-treatment CT imaging for proton therapy. <b>2020</b> , 93, 20190590		19
365	Use of short-lived positron emitters for in-beam and real-time range monitoring in proton therapy. <b>2020</b> , 69, 248-255		6
364	Multiple Computed Tomography Robust Optimization to Account for Random Anatomic Density Variations During Intensity Modulated Proton Therapy. <b>2020</b> , 5, 1022-1031		2
363	A deep learning approach for converting prompt gamma images to proton dose distributions: A Monte Carlo simulation study. <b>2020</b> , 69, 110-119		5
362	Validation of the proton range accuracy and optimization of CT calibration curves utilizing range probing. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 03NT02	3.8	14
361	Evaluation of In-Beam PET Treatment Verification in Proton Therapy With Different Reconstruction Methods. <b>2020</b> , 4, 202-211		3
360	Plan Selection in Proton Therapy of Locally Advanced Prostate Cancer with Simultaneous Treatment of Multiple Targets. <b>2020</b> , 106, 630-638		1
359	Myths and realities of range uncertainty. <b>2020</b> , 93, 20190582		15
358	Novel On-line PET Imaging for Intra-Beam Range Verification and Delivery Optimization: A Simulation Feasibility Study. <b>2020</b> , 4, 212-217		3
357	Proton beam therapy: perspectives on the National Health Service England clinical service and research programme. <b>2020</b> , 93, 20190873		6

356	Investigating neutron activated contrast agent imaging for tumor localization in proton therapy: a feasibility study for proton neutron gamma-x detection (PNGXD). <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 035005	3.8	2
355	[Uncertainties in the current concept of radiotherapy planning target volume]. <b>2020</b> , 24, 667-675		0
354	Prompt gamma imaging for the identification of regional proton range deviations due to anatomic change in a heterogeneous region. <b>2020</b> , 93, 20190619		2
353	Influence of heterogeneous media on Very High Energy Electron (VHEE) dose penetration and a Monte Carlo-based comparison with existing radiotherapy modalities. <b>2020</b> , 482, 70-81		6
352	Feasibility of quasi-prompt PET-based range verification in proton therapy. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 245013	3.8	8
351	A Fast and Accurate GATE Model for Small Field Scattering Proton Beam Therapy. <b>2020</b> ,		1
350	Classification of the source of treatment deviation in proton therapy using prompt-gamma imaging information. <b>2020</b> , 47, 5102-5111		0
349	Development of a stereoscopic CT metal artifact management algorithm using gantry angle tilts for head and neck patients. <b>2020</b> , 21, 120-130		5
348	A High-Granularity Digital Tracking Calorimeter Optimized for Proton CT. <b>2020</b> , 8,		2
347	Challenges in Monte Carlo Simulations as Clinical and Research Tool in Particle Therapy: A Review. <b>2020</b> , 8,		5
346	Anthropomorphic lung phantom based validation of in-room proton therapy 4D-CBCT image correction for dose calculation. <b>2020</b> , 32, 74-74		1
345	Delivery, Beam and Range Monitoring in Particle Therapy in a Highly Innovative Integrated Design. <b>2020</b> , 8,		2
344	Feasibility study of patient-specific dose verification in proton therapy utilizing positron emission tomography (PET) and generative adversarial network (GAN). <b>2020</b> , 47, 5194-5208		3
343	Exploiting the full potential of proton therapy: An update on the specifics and innovations towards spatial or temporal optimisation of dose delivery. <b>2020</b> , 24, 691-698		1
342	Prompt gamma imaging in proton therapy - status, challenges and developments. <b>2020</b> , 1561, 012021		2
341	FRoG: An independent dose and LET prediction tool for proton therapy at ProBeam <sup>®</sup> facilities. <b>2020</b> , 47, 5274-5286		8
340	Mitigation of the Interplay Effects of Combining 4D Robust With Layer Repainting Techniques in Proton-Based SBRT for Patients With Early-Stage Non-small Cell Lung Cancer. <b>2020</b> , 10, 574605		3
339	A study to investigate the influence of cardiac motion on the robustness of pencil beam scanning proton plans in oesophageal cancer. <b>2020</b> , 16, 50-53		1

338	Radioactive Beams in Particle Therapy: Past, Present, and Future. <b>2020</b> , 8, 00326		9
337	On-line range verification for proton beam therapy using spherical ionoacoustic waves with resonant frequency. <b>2020</b> , 10, 20385		1
336	Implementation of a Compact Spot-Scanning Proton Therapy System in a GPU Monte Carlo Code to Support Clinical Routine. <b>2020</b> , 8,		2
335	Development of an extended Macro Monte Carlo method for efficient and accurate dose calculation in magnetic fields. <b>2020</b> , 47, 6519-6530		1
334	RBE-weighted dose conversions for patients with recurrent nasopharyngeal carcinoma receiving carbon-ion radiotherapy from the local effect model to the microdosimetric kinetic model. <b>2020</b> , 15, 277		3
333	Robust treatment planning in whole pelvis pencil beam scanning proton therapy for prostate cancer. <b>2020</b> , 45, 334-338		1
332	Impact of range uncertainty on clinical distributions of linear energy transfer and biological effectiveness in proton therapy. <b>2020</b> , 47, 6151-6162		4
331	Real-Time PET Imaging for Range Verification of Helium Radiotherapy. <b>2020</b> , 8,		3
330	Proton vs Hyperarc Radiosurgery: A planning comparison. <b>2020</b> , 21, 96-108		2
329	Pencil beam scanning proton therapy of Hodgkin's lymphoma in deep inspiration breath-hold: A case series report. <b>2020</b> , 13, 6-10		2
328	Assessment of range uncertainty in lung-like tissue using a porcine lung phantom and proton radiography. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 155014	3.8	11
327	MR-guided proton therapy: a review and a preview. <b>2020</b> , 15, 129		34
326	Biological washout modelling for in-beam PET: rabbit brain irradiation by C and O ion beams. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 105011	3.8	3
325	Impact of Gaussian uncertainty assumptions on probabilistic optimization in particle therapy. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 145007	3.8	2
324	Radiotherapy in Managing Brain Metastases. <b>2020</b> ,		0
323	A machine learning framework with anatomical prior for online dose verification using positron emitters and PET in proton therapy. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 185003	3.8	3
322	Material assignment for proton range prediction in Monte Carlo patient simulations using stopping-power datasets. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 185004	3.8	3
321	Single peak analysis of proton induced prompt gamma counts. <b>2020</b> , 475, 63-70		

320	Accelerated robust optimization algorithm for proton therapy treatment planning. <b>2020</b> , 47, 2746-2754		1
319	Managing treatment-related uncertainties in proton beam radiotherapy for gastrointestinal cancers. <b>2020</b> , 11, 212-224		11
318	A new treatment planning approach accounting for prompt gamma range verification and interfractional anatomical changes. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 095005	3.8	3
317	A comparison of direct reconstruction algorithms in proton computed tomography. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 105010	3.8	5
316	Automated proton treatment planning with robust optimization using constrained hierarchical optimization. <b>2020</b> , 47, 2779-2790		3
315	4D strategies for lung tumors treated with hypofractionated scanning proton beam therapy: Dosimetric impact and robustness to interplay effects. <b>2020</b> , 146, 213-220		8
314	Dosimetric evaluation of synthetic CT generated with GANs for MRI-only proton therapy treatment planning of brain tumors. <b>2020</b> , 21, 76-86		15
313	Dosimetric consequences of image guidance techniques on robust optimized intensity-modulated proton therapy for treatment of breast Cancer. <b>2020</b> , 15, 47		5
312	Flat-panel imager energy-dependent proton radiography for a proton pencil-beam scanning system. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 145001	3.8	2
311	Analytical modeling of depth-dose degradation in heterogeneous lung tissue for intensity-modulated proton therapy planning. <b>2020</b> , 14, 32-38		5
310	Patient-specific CT calibration based on ion radiography for different detector configurations in H, He and C ion pencil beam scanning. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 245014	3.8	4
309	Cone-beam CT-derived relative stopping power map generation via deep learning for proton radiotherapy. <b>2020</b> , 47, 4416-4427		9
308	Uncertainty quantification analysis and optimization for proton therapy beam lines. <b>2020</b> , 75, 11-18		3
307	Evaluation of CBCT scatter correction using deep convolutional neural networks for head and neck adaptive proton therapy. <i>Physics in Medicine and Biology</i> , <b>2020</b> ,	3.8	15
306	Fast spot-scanning proton dose calculation method with uncertainty quantification using a three-dimensional convolutional neural network. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 215007	3.8	1
305	Pitfalls in the beam modelling process of Monte Carlo calculations for proton pencil beam scanning. <b>2020</b> , 93, 20190919		2
304	Statistical limitations in proton imaging. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 085011	3.8	6
303	Refinement of the Hounsfield look-up table by retrospective application of patient-specific direct proton stopping-power prediction from dual-energy CT. <b>2020</b> , 47, 1796-1806		8



302	Proton Beam Therapy in Liver Malignancies. <b>2020</b> , 22, 30		1
301	Proton range verification with ultrasound imaging using injectable radiation sensitive nanodroplets: a feasibility study. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 065013	3.8	14
300	Prompt gamma spectroscopy for absolute range verification of C ions at synchrotron-based facilities. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 095010	3.8	3
299	Automatic phase space generation for Monte Carlo calculations of intensity modulated particle therapy. <b>2020</b> , 6, 025001		1
298	Measurement of <sup>12</sup> C Fragmentation Cross Sections on C, O, and H in the Energy Range of Interest for Particle Therapy Applications. <b>2020</b> , 4, 269-282		3
297	Ultra-fast prompt gamma detection in single proton counting regime for range monitoring in particle therapy. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 245033	3.8	7
296	GATE MODELING OF LATERAL SCATTERING OF PROTON PENCIL BEAMS. <b>2020</b> , 189, 76-88		
295	Pre-clinical evaluation of dual-layer spectral computed tomography-based stopping power prediction for particle therapy planning at the Heidelberg Ion Beam Therapy Center. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 095007	3.8	9
294	Evaluation of plan quality and robustness of IMPT and helical IMRT for cervical cancer. <b>2020</b> , 15, 34		2
293	Simulation and Measurements of Collimator Effects in Proton and Neutron Radiation Testing for Single-Event Effects. <b>2020</b> , 67, 161-168		2
292	Sensitivity analysis of Monte Carlo model of a gantry-mounted passively scattered proton system. <b>2020</b> , 21, 26-37		3
291	Experimental exploration of a mixed helium/carbon beam for online treatment monitoring in carbon ion beam therapy. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 055002	3.8	9
290	A standardized commissioning framework of Monte Carlo dose calculation algorithms for proton pencil beam scanning treatment planning systems. <b>2020</b> , 47, 1545-1557		15
289	Evaluation of using the Doppler shift effect of prompt gamma for measuring the carbon ion range in vivo for heterogeneous phantoms. <b>2020</b> , 959, 163439		1
288	Assessment of robustness against setup uncertainties using probabilistic scenarios in lung cancer: a comparison of proton with photon therapy. <b>2020</b> , 93, 20190584		2
287	Evaluation of the effect of mechanical deformation on beam isocenter properties of the SC200 scanning beam delivery system. <b>2020</b> , 52, 2064-2071		
286	Proton therapy for head and neck squamous cell carcinomas: A review of the physical and clinical challenges. <b>2020</b> , 147, 30-39		15
285	Experimental comparison of clinically used ion beams for imaging applications using a range telescope. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 155004	3.8	2

284	Comparing Proton to Photon Radiotherapy Plans: UK Consensus Guidance for Reporting Under Uncertainty for Clinical Trials. <b>2020</b> , 32, 459-466		5
283	Fundamentals of Radiation Oncology for Neurologic Imaging. <b>2020</b> , 40, 827-858		5
282	Clinical results of active scanning proton therapy for primary liver tumors. <b>2021</b> , 107, 71-79		3
281	Dosimetric impact of commercial CT metal artifact reduction algorithms and a novel in-house algorithm for proton therapy of head and neck cancer. <b>2021</b> , 48, 445-455		3
280	Technical Note: A methodology for improved accuracy in stopping power estimation using MRI and CT. <b>2021</b> , 48, 342-353		1
279	Variance-based sensitivity analysis for uncertainties in proton therapy: A framework to assess the effect of simultaneous uncertainties in range, positioning, and RBE model predictions on RBE-weighted dose distributions. <b>2021</b> , 48, 805-818		1
278	openPR - A computational tool for CT conversion assessment with proton radiography. <b>2021</b> , 48, 387-396		2
277	The use of tumour markers in oesophageal cancer to quantify setup errors and baseline shifts during treatment. <b>2021</b> , 26, 8-14		0
276	MR-guided proton therapy: Impact of magnetic fields on the detector response. <b>2021</b> , 48, 2572-2579		1
275	Single pencil beam benchmark of a module for Monte Carlo simulation of proton transport in the PENELOPE code. <b>2021</b> , 48, 456-476		3
274	Impact of Multiple Beams on Plan Quality, Linear Energy Transfer Distribution, and Plan Robustness of Intensity Modulated Proton Therapy for Lung Cancer. <b>2021</b> , 6, 408-417		2
273	Secondary Particle Interactions in a Compton Camera Designed for Range Verification of Proton Therapy. <b>2021</b> , 5, 383-391		1
272	Proton and Heavy Particle Intracranial Radiosurgery. <b>2021</b> , 9,		3
271	Proton therapy range verification method via delayed $\beta$ -ray spectroscopy of a molybdenum tumour marker. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66, 025005	3.8	0
270	Robustly optimized hybrid intensity-modulated proton therapy for craniospinal irradiation. <b>2021</b> ,		0
269	Positron emitter depth distribution in PMMA irradiated with 130 MeV protons measured using TOF-PET detectors.. <b>2021</b> , 1-1		1
268	Simulation Study of a 3D Multi-slit Prompt Gamma Imaging System for Proton Therapy Monitoring. <b>2021</b> , 1-1		0
267	Clinical Progress in Proton Radiotherapy: Biological Unknowns. <i>Cancers</i> , <b>2021</b> , 13,	6.6	7

266	X-ray beam induced current analysis of CVD diamond detectors in the perspective of a beam tagging hodoscope development for hadrontherapy on-line monitoring. <b>2021</b> , 112, 108236		0
265	Electromagnetic Signal of a Proton Beam in Biological Tissues for a Potential Range-Verification Approach in Proton Therapy. <b>2021</b> , 15,		0
264	Head-and-neck organs-at-risk auto-delineation using dual pyramid networks for CBCT-guided adaptive radiotherapy. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66, 045021	3.8	8
263	Development of phantom materials with independently adjustable CT- and MR-contrast at 0.35, 1.5 and 3 T. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66, 045013	3.8	3
262	Comparison of weekly and daily online adaptation for head and neck intensity-modulated proton therapy. <i>Physics in Medicine and Biology</i> , <b>2021</b> ,	3.8	5
261	Enhancement of the ionoacoustic effect through ultrasound and photoacoustic contrast agents. <b>2021</b> , 11, 2725		2
260	Measuring prompt gamma-ray emissions from elements found in tissue during passive-beam proton therapy. <b>2021</b> , 7,		2
259	Roadmap: proton therapy physics and biology. <i>Physics in Medicine and Biology</i> , <b>2020</b> ,	3.8	17
258	Accounting for prompt gamma emission and detection for range verification in proton therapy treatment planning. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66, 055005	3.8	1
257	Evaluation of the inter- and intrafraction displacement for head patients treated at the particle therapy centre MedAustron based on the comparison of different commercial immobilisation devices. <b>2021</b> ,		1
256	Acoustic-Based Proton Range Verification. <b>2021</b> , 443-456		0
255	Fluence-modulated proton CT optimized with patient-specific dose and variance objectives for proton dose calculation. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66, 064001	3.8	3
254	Cardiac-Sparing and Breast-Sparing Whole Lung Irradiation Using Intensity-Modulated Proton Therapy. <b>2021</b> , 7, 65-73		0
253	Modulating ultrasound contrast generation from injectable nanodroplets for proton range verification by varying the degree of superheat. <b>2021</b> , 48, 1983-1995		4
252	Consensus Statement on Proton Therapy in Mesothelioma. <b>2021</b> , 11, 119-133		4
251	Synthetic dual-energy CT for MRI-only based proton therapy treatment planning using label-GAN. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66, 065014	3.8	6
250	Calibrated uncertainty estimation for interpretable proton computed tomography image correction using Bayesian deep learning. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66, 065029	3.8	1
249	PAPRICA: The Pair Production Imaging ChamberProof of Principle. <b>2021</b> , 9,		

248	Animal tissue-based quantitative comparison of dual-energy CT to SPR conversion methods using high-resolution gel dosimetry. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	3
247	Improving proton dose calculation accuracy by using deep learning. <b>2021</b> , 2, 015017		2
246	Comparative Analysis of 5-Year Clinical Outcomes and Patterns of Failure of Proton Beam Therapy Versus Intensity Modulated Radiation therapy for Prostate Cancer in the Postoperative Setting. <b>2021</b> , 11, e195-e202		1
245	Dictionary-based protoacoustic dose map imaging for proton range verification. <b>2021</b> , 21, 100240		2
244	A Monte Carlo Determination of Dose and Range Uncertainties for Preclinical Studies with a Proton Beam. <i>Cancers</i> , <b>2021</b> , 13,	6.6	1
243	Evaluation of effectiveness of equivalent dose during proton boron fusion therapy (PBFT) for brain cancer: A Monte Carlo study. <b>2021</b> , 170, 109596		0
242	Proton range verification with MACACO II Compton camera enhanced by a neural network for event selection. <b>2021</b> , 11, 9325		2
241	Dosimetric impact of range uncertainty in passive scattering proton therapy. <b>2021</b> , 22, 6-14		
240	Direct proton range verification using oxygen-18 enriched water as a contrast agent. <b>2021</b> , 182, 109385		1
239	Advances in Pediatric Radiation Oncology: Proton Therapy. <b>2021</b> , 1, 155-167		
238	Statistical limitations in ion imaging. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	1
237	Evaluation of the dosimetric effect of scattered protons in clinical practice in passive scattering proton therapy. <b>2021</b> , 22, 104-118		0
236	Artificial intelligence supported single detector multi-energy proton radiography system. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	1
235	Validation of dose distribution for liver tumors treated with real-time-image gated spot-scanning proton therapy by log data based dose reconstruction. <b>2021</b> , 62, 626-633		0
234	Influence of sub-nanosecond time of flight resolution for online range verification in proton therapy using the line-cone reconstruction in Compton imaging. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	1
233	A time-of-flight-based reconstruction for real-time prompt-gamma imaging in proton therapy. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	1
232	A Review of Inorganic Scintillation Crystals for Extreme Environments. <b>2021</b> , 11, 669		12
231	Applications of a novel detector for pencil beam scanning proton therapy beam quality assurance. <b>2021</b> , 35, 2140041		

230	Dual-Energy Computed Tomography Proton-Dose Calculation with Scripting and Modified Hounsfield Units. <b>2021</b> , 8, 62-72		0
229	Beam-Specific Spot Guidance and Optimization for PBS Proton Treatment of Bilateral Head and Neck Cancers. <b>2021</b> , 8, 50-61		0
228	An empirical artifact correction for proton computed tomography. <b>2021</b> , 86, 57-65		2
227	Outcomes of and treatment planning considerations for a hybrid technique delivering proton pencil-beam scanning radiation to women with metal-containing tissue expanders undergoing post-mastectomy radiation. <b>2021</b> , 164, 289-298		
226	In-vivo proton range verification for reducing the risk of permanent alopecia in medulloblastoma treatment. <b>2021</b> ,		
225	Assessment of the impact of CT calibration procedures for proton therapy planning on pediatric treatments. <b>2021</b> , 48, 5202-5218		1
224	Technical Note: Multiple energy extraction techniques for synchrotron-based proton delivery systems may exacerbate motion interplay effects in lung cancer treatments. <b>2021</b> , 48, 4812-4823		0
223	Image quality evaluation of projection- and depth dose-based approaches to integrating proton radiography using a monolithic scintillator detector. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	2
222	Introducing a probabilistic definition of the target in a robust treatment planning framework. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	0
221	Towards real-time PGS range monitoring in proton therapy of prostate cancer. <b>2021</b> , 11, 15331		2
220	Contemporary radiotherapy: present and future. <b>2021</b> , 398, 171-184		13
219	Reduce Patient Treatment wait time in a Proton Beam Facility - A Gatekeeper Approach. <b>2021</b> , 45, 80		0
218	Proton range uncertainty reduction benefits for skull base tumors in terms of normal tissue complication probability (NTCP) and healthy tissue doses. <b>2021</b> , 48, 5356-5366		4
217	Technical Note: Range verification of pulsed proton beams from fixed-field alternating gradient accelerator by means of time-of-flight measurement of ionoacoustic waves. <b>2021</b> , 48, 5490-5500		0
216	First-In-Human Validation of CT-Based Proton Range Prediction Using Prompt Gamma Imaging in Prostate Cancer Treatments. <b>2021</b> , 111, 1033-1043		2
215	Trend analysis of the dosimetric impact of anatomical changes during proton therapy for maxillary sinus carcinoma. <b>2021</b> , 22, 298-306		1
214	Radioactive Beams for Image-Guided Particle Therapy: The BARB Experiment at GSI. <b>2021</b> , 11, 737050		2
213	Can iodine be used as a contrast agent for protontherapy range verification? Measurement of the $^{127}\text{I}(p,n)^{127\text{m}}\text{Xe}$ (reaction) cross section in the 4.5-10 MeV energy range. <b>2021</b> , 185, 109485		1

212	The Promise of Proton Beam Therapy for Oesophageal Cancer: A Systematic Review of Dosimetric and Clinical Outcomes. <b>2021</b> , 33, e339-e358		1
211	Investigating beam range uncertainty in proton prostate treatment using pelvic-like biological phantoms. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	
210	Dosimetric Comparison of Proton Versus Photon Radiosurgery for Treatment of Pituitary Adenoma.. <b>2021</b> , 6, 100806		1
209	Efficient uncertainty quantification for Monte Carlo dose calculations using importance (re-)weighting. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	0
208	Automated robust SBPT planning using EUD-based prediction of SBRT plan for patients with lung cancer. <b>2021</b> , 209, 106338		
207	A proof-of-concept study of an in-situ partial-ring time-of-flight PET scanner for proton beam verification. <b>2021</b> , 5, 694-702		2
206	Deep learning based synthetic-CT generation in radiotherapy and PET: A review. <b>2021</b> , 48, 6537-6566		11
205	Investigating the accuracy of co-registered ionoacoustic and ultrasound images in pulsed proton beams. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	0
204	Upgrade of gamma electron vertex imaging system for high-performance range verification in pencil beam scanning proton therapy. <b>2021</b> ,		0
203	Can a ToF-PET photon attenuation reconstruction test stopping-power estimations in proton therapy? A phantom study. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	1
202	Denosing proton therapy Monte Carlo dose distributions in multiple tumor sites: A comparative neural networks architecture study. <b>2021</b> , 89, 93-103		1
201	Physics and biomedical challenges of cancer therapy with accelerated heavy ions. <b>2021</b> , 3, 777-790		11
200	First experimental results of gated proton imaging using x-ray fluoroscopy to detect a fiducial marker. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	
199	Proton Therapy for Breast Cancer: A Consensus Statement From the Particle Therapy Cooperative Group Breast Cancer Subcommittee. <b>2021</b> , 111, 337-359		11
198	Experimental assessment of inter-centre variation in stopping-power and range prediction in particle therapy. <b>2021</b> , 163, 7-13		5
197	Study of relationship between dose, LET and the risk of brain necrosis after proton therapy for skull base tumors. <b>2021</b> , 163, 143-149		0
196	Performance of CVD diamond detectors for single ion beam-tagging applications in hadrontherapy monitoring. <b>2021</b> , 1015, 165757		0
195	A Beam-Specific Optimization Target Volume for Stereotactic Proton Pencil Beam Scanning Therapy for Locally Advanced Pancreatic Cancer. <b>2021</b> , 6, 100757		3

194	Production yields at the distal fall-off of the $\beta^+$ emitters 11C and 13N for in-vivo range verification in proton therapy. <b>2022</b> , 190, 109759		1
193	Particle-Tracking Proton Computed Tomography-Data Acquisition, Preprocessing, and Preconditioning. <b>2021</b> , 9, 25946-25958		5
192	Detection of Interfractional Morphological Changes in Proton Therapy: A Simulation and In Vivo Study With the INSIDE In-Beam PET. <b>2021</b> , 8,		6
191	Commissioning of GPU Accelerated Monte Carlo Code FRED for Clinical Applications in Proton Therapy. <b>2021</b> , 8,		6
190	. <b>2021</b> , 1-1		0
189	Helium radiography with a digital tracking calorimeter-a Monte Carlo study for secondary track rejection. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66, 035004	3.8	3
188	Rectal dose to prostate cancer patients treated with proton therapy with or without rectal spacer. <b>2017</b> , 18, 32-39		7
187	Technical Note: First report on an in vivo range probing quality control procedure for scanned proton beam therapy in head and neck cancer patients. <b>2021</b> , 48, 1372-1380		2
186	Investigation of the Properties of the Heavy Scintillating Fibers for Their Potential Use in Hadron Therapy Monitoring. <b>2019</b> , 195-210		2
185	SFUD, IMPT, and Plan Robustness. <b>2016</b> , 169-194		3
184	Proton Therapy Treatment Plan Verification in CCB Krakow Using Fred Monte Carlo TPS Tool. <b>2019</b> , 783-787		3
183	Concepts of PTV and Robustness in Passively Scattered and Pencil Beam Scanning Proton Therapy. <b>2018</b> , 28, 248-255		14
182	Dosimetric impact of geometric distortions in an MRI-only proton therapy workflow for lung, liver and pancreas. <b>2020</b> ,		1
181	Benchmarking of FLUKA production cross sections of positron emission tomography isotopes for in-vivo range verification in hadron therapy. <b>2020</b> , 239, 24001		1
180	Experimental realization of dynamic fluence field optimization for proton computed tomography. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 195001	3.8	5
179	Relative stopping power measurements and prosthesis artifacts reduction in proton CT. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 225012	3.8	5
178	First results developing time-of-flight proton radiography for proton therapy applications. <b>2019</b> ,		2
177	Treatment planning study comparing proton therapy, RapidArc and IMRT for a synchronous bilateral lung cancer case. <b>2014</b> , 2, 020216		10

176	Intensity modulated proton therapy versus uniform scanning proton therapy: Treatment planning study of the prostate cancer in patients with a unilateral metallic hip prosthesis. <b>2015</b> , 1, 113	5
175	Cone-Beam Computed Tomography and Deformable Registration-Based Dose of the Day <sup>2</sup> Calculations for Adaptive Proton Therapy. <b>2015</b> , 2, 404-414	39
174	Dosimetric Comparison of Treatment Techniques: Brachytherapy, Intensity-Modulated Radiation Therapy, and Proton Beam in Partial Breast Irradiation. <b>2015</b> , 2, 376-384	1
173	Anteriorly Oriented Beam Arrangements with Daily in Vivo Range Verification for Proton Therapy of Prostate Cancer: Rectal Toxicity Rates. <b>2016</b> , 2, 509-517	3
172	Interplay Effect of Target Motion and Pencil-Beam Scanning in Proton Therapy for Pediatric Patients. <b>2018</b> , 5, 1-10	8
171	Evaluation of Computed Tomography Scanners for Feasibility of Using Averaged Hounsfield Unit-to-Stopping Power Ratio Calibration Curve. <b>2018</b> , 5, 28-37	1
170	Characterization of a MLIC Detector for QA in Scanned Proton and Carbon Ion Beams. <b>2019</b> , 6, 50-59	1
169	Development of Signal Processing Modules for Double-sided Silicon Strip Detector of Gamma Vertex Imaging for Proton Beam Dose Verification. <b>2014</b> , 39, 81-88	6
168	On the Role of Single Particle Irradiation and Fast Timing for Efficient Online-Control in Particle Therapy. <b>2020</b> , 8,	4
167	Combinatorial optimisation in radiotherapy treatment planning. <b>2018</b> , 5, 204-223	2
166	New developments in treatment planning and verification of particle beam therapy. <b>2012</b> , 1, 184-195	4
165	Dosimetric impact of number of treatment fields in uniform scanning proton therapy planning of lung cancer. <b>2014</b> , 39, 212-8	5
164	Monte Carlo Simulation and a Review of the Physics of the Positron Annihilation Process in PET. <b>2013</b> , 05, 12-17	1
163	Spatiotemporal Distribution of Nanodroplet Vaporization in a Proton Beam Using Real-Time Ultrasound Imaging for Range Verification. <b>2022</b> , 48, 149-156	1
162	Fundamentals of Radiation Oncology for Treatment of Vertebral Metastases. <b>2021</b> , 41, 2136-2156	0
161	Synthetic CT-aided multiorgan segmentation for CBCT-guided adaptive pancreatic radiotherapy. <b>2021</b> , 48, 7063-7073	0
160	Tongue Displacement Device in Decreasing the Radiation Dose to Tongue and Preventing Proton Beam Overshoot in Proton Therapy for Unilateral Head and Neck Cancer. <b>2021</b> , 9,	0
159	Pediatric Cancers. <b>2015</b> , 443-465	



158	Monte Carlo Dose Calculations for Proton Therapy. <b>2015</b> , 259-272		
157	Quantifying Proton Fields for Midline Brain Tumors: A Benefit/Cost Analysis of Planning Objectives. <b>2016</b> , 3, 13-20		
156	Pediatric Radiotherapy: Surgical Considerations, Sequelae, and Future Directions. <b>2017</b> , 1-14		
155	Robust Planning for a Patient Treated in Decubitus Position with Proton Pencil Beam Scanning Radiotherapy. <b>2017</b> , 9, e1706		1
154	Medical therapy and imaging fixed-field alternating-gradient accelerator with realistic magnets. <b>2017</b> , 20,		
153	Treatment-Plan Comparison of Three Advanced Radiation Treatment Modalities for Fractionated Stereotactic Radiotherapy to the Head and Neck. <b>2019</b> , 08, 106-120		
152	Measurement of the Production Cross Sections of ( $\beta^+$ ) Emitters for Range Verification in Proton Therapy. <b>2019</b> , 159-161		
151	Spot decomposition in a novel pencil beam scanning proton computed tomography. <b>2019</b> ,		
150	Tissue-Mimicking Materials for Cardiac Imaging Phantom Selection. <b>2020</b> , 3-33		1
149	Proton therapy: the current status of the clinical evidences. <b>2019</b> , 3, 91-102		1
148	Proton Versus Intensity-Modulated Radiation Therapy: First Dosimetric Comparison for Total Scalp Irradiation. <b>2020</b> , 6, 19-26		0
147	The accuracy of helium ion CT based particle therapy range prediction: an experimental study comparing different particle and x-ray CT modalities. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	0
146	Adaptive proton therapy. <i>Physics in Medicine and Biology</i> , <b>2021</b> , 66,	3.8	7
145	Low Intensity Beam Extraction Mode on the Protom Synchrotron for Proton Radiography Implementation. <b>2021</b> , 2058, 012041		0
144	Dual-layer spectral CT for proton, helium, and carbon ion beam therapy planning of brain tumors. <b>2021</b> ,		2
143	The Role of Plan Robustness Evaluation in Comparing Protons and Photons Plans - An Application on IMPT and IMRT Plans in Skull Base Chordomas. <b>2020</b> , 45, 206-214		0
142	Particle Therapy for the Treatment of Brain Metastases. <b>2020</b> , 185-196		
141	Pediatric Radiotherapy: Surgical Considerations, Sequelae, and Future Directions. <b>2020</b> , 209-218		

140	A comparison of proton stopping power measured with proton CT and x-ray CT in fresh postmortem porcine structures. <b>2021</b> , 48, 7998		0
139	First Results From All-Digital PET Dual Heads for In-Beam Beam-On Proton Therapy Monitoring. <b>2021</b> , 5, 775-782		2
138	Carbon-11 and Carbon-12 beam range verifications through prompt gamma and annihilation gamma measurements: Monte Carlo simulations. <b>2020</b> , 6,		0
137	Proton Therapy Review: Proton Therapy from a Medical. <b>2020</b> , 31, 99-110		1
136	Convolutional neural network based proton stopping-power-ratio estimation with dual-energy CT: a feasibility study. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65, 215016	3.8	1
135	Classification of various sources of error in range assessment using proton radiography and neural networks in head and neck cancer patients. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65,	3.8	1
134	Implementation of a double scattering nozzle for Monte Carlo recalculation of proton plans with variable relative biological effectiveness. <i>Physics in Medicine and Biology</i> , <b>2020</b> , 65,	3.8	0
133	Initial Validation of Proton Dose Calculations on SPR Images from DECT in Treatment Planning System. <b>2020</b> , 7, 51-61		0
132	Proton range monitoring based on picosecond detection using a Cherenkov radiation detector: A Monte Carlo study. <b>2021</b> , 180, 110055		
131	Optimization of the backing material of a low frequency PVDF detector for ion beam monitoring during small animal proton irradiation. <b>2021</b> ,		0
130	Metallic Nanoparticles: A Useful Prompt Gamma Emitter for Range Monitoring in Proton Therapy?. <b>2021</b> , 1, 305-316		1
129	CT-on-Rails Versus In-Room CBCT for Online Daily Adaptive Proton Therapy of Head-and-Neck Cancers. <i>Cancers</i> , <b>2021</b> , 13,	6.6	2
128	Further investigation of 3D dose verification in proton therapy utilizing acoustic signal, wavelet decomposition and machine learning. <b>2021</b> , 8,		0
127	Experimental demonstration of accurate Bragg peak localization with ionoacoustic tandem phase detection (iTPD). <i>Physics in Medicine and Biology</i> , <b>2021</b> ,	3.8	0
126	Reduction of clinical safety margins in proton therapy enabled by the clinical implementation of dual-energy CT for direct stopping-power prediction. <b>2021</b> , 166, 71-78		4
125	An extensive study of depth dose distribution and projectile fragmentation cross-section for shielding materials using Geant4.. <b>2021</b> , 180, 110068		0
124	A Primary Proton Integral Depth Dose Calculation Model Corrected with Straight Scattering Track Approximation.		
123	Evaluation of the impact of a scanner prototype on proton CT and helium CT image quality and dose efficiency with Monte Carlo simulation.. <i>Physics in Medicine and Biology</i> , <b>2022</b> ,	3.8	0

122	Towards subpercentage uncertainty proton stopping-power mapping via dual-energy CT: Direct experimental validation and uncertainty analysis of a statistical iterative image reconstruction method.. <b>2022</b> ,		0
121	Dictionary-based software for proton dose reconstruction and submillimetric range verification.. <i>Physics in Medicine and Biology</i> , <b>2022</b> ,	3.8	0
120	Development of a heterogeneous phantom to measure range in clinical proton therapy beams.. <b>2021</b> , 93, 59-68		0
119	Hadrontherapy techniques for breast cancer.. <b>2021</b> , 169, 103574		1
118	An Analysis Scheme for 3D Visualization of Positron Emitting Radioisotopes Using Positron Emission Mammography System. <b>2022</b> , 12, 823		0
117	A universal range shifter and range compensator can enable proton pencil beam scanning single-energy Bragg peak FLASH-RT treatment using current commercially available proton systems.. <b>2022</b> ,		1
116	A reconstruction approach for proton computed tomography by modeling the integral depth dose of the scanning proton pencil beam.. <b>2022</b> ,		0
115	A novel proton-integrating radiography system design using a monolithic scintillator detector: experimental studies.. <b>2022</b> , 1027, 166077-166077		0
114	Development and validation of an automatic commissioning tool for the Monte Carlo dose engine in myQA iON.. <b>2022</b> , 95, 1-8		0
113	Evaluation of robustly optimised intensity modulated proton therapy for nasopharyngeal carcinoma.. <b>2022</b> , 168, 221-228		1
112	Towards an integral clinical proton dose prediction uncertainty by considering delineation variation.. <b>2022</b> , 21, 134-135		0
111	Acoustic Modulation Enables Proton Detection with Nanodroplets at Body Temperature.. <b>2022</b> , PP,		0
110	Numerical prediction based on sub-beam decomposition for magnetic deflection in MRI-guided proton therapy. <b>2022</b> ,		0
109	Proton range monitoring using 13N peak for proton therapy applications.. <b>2022</b> , 17, e0263521		0
108	Proton Therapy for Prostate Cancer: Challenges and Opportunities.. <i>Cancers</i> , <b>2022</b> , 14,	6.6	0
107	Towards machine learning aided real-time range imaging in proton therapy.. <b>2022</b> , 12, 2735		0
106	Experimental validation of 4D log file-based proton dose reconstruction for interplay assessment considering amplitude-sorted 4DCTs.. <b>2022</b> ,		0
105	Estimate of the Biological Dose in Hadrontherapy Using GATE.. <i>Cancers</i> , <b>2022</b> , 14,	6.6	0

104	A Data-Driven Fragmentation Model for Carbon Therapy GPU-Accelerated Monte-Carlo Dose Recalculation.. <b>2022</b> , 12, 780784		o
103	Proton therapy monitoring: spatiotemporal emission reconstruction with prompt gamma timing and implementation with PET detectors.. <i>Physics in Medicine and Biology</i> , <b>2022</b> ,	3.8	o
102	Daily adaptive proton therapy: Feasibility study of detection of tumor variations based on tomographic imaging of prompt gamma emission from protonBoron fusion reaction. <b>2022</b> ,		
101	Range uncertainty reductions in proton therapy may lead to the feasibility of novel beam arrangements which improve organ at risk sparing.. <b>2022</b> ,		o
100	Automated CT segmentation for rapid assessment of anatomical variations in head-and-neck radiation therapy. <b>2022</b> ,		1
99	A deep learning approach to transform two orthogonal X-ray images to volumetric images for image-guided proton therapy. <b>2022</b> ,		
98	Using a neural network to enhance dual-energy computed tomography parametric mapping for proton therapy. <b>2022</b> ,		o
97	Dose prediction in proton cancer therapy based on density maps from dual-energy CT using joint statistical image reconstruction. <b>2022</b> ,		
96	Improved healthy tissue sparing in proton therapy of lung tumors using statistically sound robust optimization and evaluation.. <b>2022</b> , 96, 62-69		o
95	Using orthogonal 2D kV images for target localization via central matching networks. <b>2022</b> ,		
94	Performance prediction of gamma electron vertex imaging (GEVI) system for interfractional range shift detection in spot scanning proton therapy. <b>2021</b> ,		o
93	Evaluating the usefulness of the direct density reconstruction algorithm for intensity modulated and passively scattered proton therapy: Validation using an anthropomorphic phantom. <b>2021</b> , 92, 95-101		o
92	Reconstruction of Proton Image with Ion Recombination Compensation. <b>2021</b> ,		
91	Effect of Total Collimation Width on Relative Electron Density, Effective Atomic Number, and Stopping Power Ratio Acquired by Dual-Layer Dual-Energy Computed Tomography. <b>2021</b> , 32, 165-171		
90	Preliminary results of the experimental cross sections of the long-lived $\beta^+$ emitters of interest in PET range verification in proton therapy at clinical energies. <b>2022</b> , 261, 05007		
89	First in-beam tests on simultaneous PET and Compton imaging aimed at quasi-real-time range verification in hadron therapy. <b>2022</b> , 261, 05002		o
88	Improved accuracy of relative electron density and proton stopping power ratio through CycleGAN machine learning.. <i>Physics in Medicine and Biology</i> , <b>2022</b> ,	3.8	
87	Potential of a Second-Generation Dual-Layer Spectral CT for Dose Calculation in Particle Therapy Treatment Planning.. <b>2022</b> , 12, 853495		o

86	Comparative accuracy and resolution assessment of two prototype proton computed tomography scanners.. <b>2022</b> ,		
85	Applications of Machine Learning to Improve the Clinical Viability of Compton Camera Based in vivo Range Verification in Proton Radiotherapy. <b>2022</b> , 10,		o
84	Technical Design Report for a Carbon-11 Treatment Facility.. <b>2021</b> , 8, 697235		o
83	In vivo production of fluorine-18 in a chicken egg tumor model of breast cancer for proton therapy range verification.. <b>2022</b> , 12, 7075		o
82	New Algorithm to Estimate Proton Beam Range for Multi-slit Prompt-gamma Camera. <b>2022</b> ,		
81	Prospect of radiotherapy technology development in the era of immunotherapy. <b>2022</b> ,		1
80	Toward automatic beam angle selection for pencil-beam scanning proton liver Treatments: A deep learning-based approach.. <b>2022</b> ,		
79	Feasibility study of fast intensity-modulated proton therapy dose prediction method using deep neural networks for prostate cancer.. <b>2022</b> ,		o
78	Deep learning for dose assessment in radiotherapy by the super-localization of vaporized nanodroplets in high frame rate ultrasound imaging.. <i>Physics in Medicine and Biology</i> , <b>2022</b> ,	3.8	
77	Accuracy of stopping power ratio calculation and experimental validation of proton range with dual-layer computed tomography.. <b>2022</b> , 1-5		
76	Dual-energy CT based mass density and relative stopping power estimation for proton therapy using physics-informed deep learning.. <i>Physics in Medicine and Biology</i> , <b>2022</b> ,	3.8	o
75	Dental management in head and neck cancers: from intensity-modulated radiotherapy with photons to proton therapy.. <b>2022</b> ,		
74	Ultrasound-assisted carbon ion dosimetry and range measurement using injectable polymer-shelled phase-change nanodroplets: in vitro study.. <b>2022</b> , 12, 8012		
73	The dose accumulation and the impact of deformable image registration on dose reporting parameters in a moving patient undergoing proton radiotherapy.. <b>2022</b> , 56, 248-258		o
72	Proton Therapy for Squamous Cell Carcinoma of the Head and Neck: Early Clinical Experience and Current Challenges. <i>Cancers</i> , <b>2022</b> , 14, 2587	6.6	o
71	Stoichiometric CT number calibration using three-parameter fit model for ion therapy. <b>2022</b> , 99, 22-30		o
70	Machine learning-based event recognition in SiFi Compton camera imaging for proton therapy monitoring. <i>Physics in Medicine and Biology</i> ,	3.8	o
69	Treatment Planning for Scanning Beam Proton Therapy. <b>2022</b> , 55-79		

- 68 Proton radiography using discrete range modulation method [A Monte Carlo study. **2022**, 110279
- 67 A primary proton integral depth dose calculation model corrected with straight scattering track approximation. **2022**, 110283 ○
- 66 Proton Therapy in the Management of Pancreatic Cancer. *Cancers*, **2022**, 14, 2789 6.6 ○
- 65 Commissioning of A Synchrotron-Based Proton Beam Therapy System for Use with a Monte Carlo Treatment Planning System.
- 64 Experimental helium-beam radiography with a high-energy beam: Water-equivalent thickness calibration and first image-quality results.
- 63 Theoretical approaches and Monte Carlo simulations in a clinical proton beam. **2022**, 10,
- 62 Comparison of reconstructed prompt gamma emissions using maximum likelihood estimation and origin ensemble algorithms for a Compton camera system tailored to proton range monitoring. **2022**, ○
- 61 Deformable Image Registration Uncertainty Quantification Using Deep Learning for Dose Accumulation in Adaptive Proton Therapy. **2022**, 57-66 ○
- 60 Synchronized high-speed scintillation imaging of proton beams, generated by a gantry-mounted synchrocyclotron, on a pulse-by-pulse basis. ○
- 59 Proton Beam Therapy versus Photon Radiotherapy for Stage I Non-Small Cell Lung Cancer. *Cancers*, **2022**, 14, 3627 6.6
- 58 One-step iterative reconstruction approach based on eigentissue decomposition for spectral photon-counting computed tomography. *Journal of Medical Imaging*, **2022**, 9, 2.6 ○
- 57 Distributed and scalable optimization for robust proton treatment planning.
- 56 MONTE CARLO SIMULATIONS OF OUT-OF-FIELD LET SPECTRA IN WATER PHANTOM IRRADIATED BY SCANNING PENCIL PROTON BEAM. **2022**, 198, 573-579
- 55 Direct mapping from PET coincidence data to proton-dose and positron activity using a deep learning approach. ○
- 54 MOQUI: an open-source GPU-based Monte Carlo code for proton dose calculation with efficient data structure. ○
- 53 Validation of prompt gamma spectroscopy for proton range verification in tissue-mimicking and porcine samples. ○
- 52 Depth dose measurements in water for 11C and 10C beams with therapy relevant energies. **2022**, 167464 ○
- 51 Prediction of proton beam range in phantom with metals based on monochromatic energy CT images. ○

- 50 Characterization of a Compton camera based on the TOFPET2 ASIC. **2023**, 202, 110507 ○
- 49 Optimization of the Low-Intensity Beam Extraction Mode at the Medical Synchrotron for Application in Proton Radiography and Tomography. **2022**, 77, 657-660 ○
- 48 An investigation of oxygen enhancement ratio modeling for proton dose calculation. ○
- 47 Validation of a deep learning-based material estimation model for Monte Carlo dose calculation in proton therapy. ○
- 46 Estimating the stopping power distribution during proton therapy: A proof of concept. 10, ○
- 45 ProTheRaMon - a GATE simulation framework for proton therapy range monitoring using PET imaging. ○
- 44 Microdosimetry with a mini-TEPC in the spread-out Bragg peak of 148 MeV protons. **2022**, 110567 ○
- 43 A plan verification platform for online adaptive proton therapy using deep learning-based Monte Carlo denoising. **2022**, 103, 18-25 ○
- 42 Hadron Therapy Range Verification via Machine-Learning Aided Prompt-Gamma Imaging. **2021**, ○
- 41 Proton center staffing: A multicenter survey in the United States. ○
- 40 Proton beam range verification by means of ionoacoustic measurements at clinically relevant doses using a correlation-based evaluation. 12, ○
- 39 Multivariate error modeling and uncertainty quantification using importance (re-)weighting for Monte Carlo simulations in particle transport. **2023**, 473, 111725 ○
- 38 Determination of WER and WET equivalence estimators for proton beams in the therapeutic energy range using MCNP6.1 and TOPAS codes. **2023**, 203, 110606 ○
- 37 Impact of secondary particles on the magnetic field generated by a proton pencil beam: a finite element analysis based on Geant4-DNA simulations. ○
- 36 Sharp dose profiles for high precision proton therapy using strongly focused proton beams. **2022**, 12, ○
- 35 Improvement of proton beam range uncertainty in breast treatment using tissue samples. ○
- 34 Commissioning of a synchrotron-based proton beam therapy system for use with a Monte Carlo treatment planning system. **2023**, 204, 110708 ○
- 33 The MERLINO project: characterization of LaBr<sub>3</sub>:Ce detectors for stopping power monitoring in proton therapy. **2022**, 17, C11013 ○

- 32 Experience and new prospects of PET imaging for ion beam therapy monitoring. **2022**, ○
- 31 Dual- and multi-energy CT for particle stopping-power estimation: current state, challenges and potential. ○
- 30 GPU accelerated Monte Carlo scoring of positron emitting isotopes produced during proton therapy for PET verification. **2022**, 67, 244001 ○
- 29 Dose calculation of proton therapy based on Monte Carlo and empirical formula. ○
- 28 Ionoacoustic application of an optical hydrophone to detect proton beam range in water. ○
- 27 Feasibility study of using triple-energy CT images for improving stopping power estimation. **2022**, ○
- 26 Introduce a rotational robust optimization framework for spot-scanning proton arc (SPArc) therapy. **2023**, 68, 01NT02 ○
- 25 Evaluation of treatment planning system accuracy in estimating the stopping-power ratio of immobilization devices for proton therapy. ○
- 24 Dosimetric impact of systematic spot position errors in spot scanning proton therapy of head and neck tumor. **2023**, 0 ○
- 23 A comparative study of machine-learning approaches in proton radiography using energy-resolved dose function. **2023**, 106, 102525 ○
- 22 Light-transport incorporated plastic scintillator response to prompt gamma-rays for use in range verification of proton therapy. **2023**, 1049, 168036 ○
- 21 A Deterministic Adjoint-Based Semi-Analytical Algorithm for Fast Response Change Computations in Proton Therapy. 1-41 ○
- 20 Applications of Radiation Detectors to Society. **2023**, 11-19 ○
- 19 An evaluation of the use of DirectSPR images for proton planning in the RayStation treatment planning software. ○
- 18 Design and performance evaluation of a slit-slat camera for 2D prompt gamma imaging in proton therapy monitoring: A Monte Carlo simulation study. ○
- 17 Static superconducting gantry-based proton CT combined with X-ray CT as prior image for FLASH proton therapy. **2023**, 34, ○
- 16 Recent Advancements of Artificial Intelligence in Particle Therapy. **2023**, 1-1 ○
- 15 Loading the tumor with <sup>31</sup>P, <sup>63</sup>Cu and <sup>89</sup>Y provides an in vivo prompt gamma-based range verification for therapeutic protons. 11, ○



- 14 Prompt-gamma fall-off estimation with C-ion irradiation at clinical energies, using a knife-edge slit camera: A Monte Carlo study. **2023**, 107, 102554
- 13 Production of  $^{11}\text{C}$ ,  $^{13}\text{N}$  and  $^{15}\text{O}$  in proton-induced nuclear reactions up to 200 MeV. **2023**, 187, 579-596
- 12 Short-lived radioactive  $^8\text{Li}$  and  $^8\text{He}$  ions for hadrontherapy: a simulation study. **2023**, 68, 054001
- 11 Trajectory dependence of electronic energy-loss straggling at keV ion energies. **2023**, 107,  1
- 10 A feasibility study of enhanced prompt gamma imaging for range verification in proton therapy using deep learning. **2023**, 68, 075001
- 9 Deep learning-based reconstruction: validation for treatment planning CT.
- 8 System characterization and performance studies with MACACO III Compton camera. **2023**, 208, 110922
- 7 The CMAM facility for proton-therapy pre-clinical studies: biomaterial irradiation experiments. **2023**, 18, C03025
- 6 Error on the stopping power ratio of ERKODENT's mouthpiece for head and neck carbon ion radiotherapy treatment.
- 5 Emerging technologies for cancer therapy using accelerated particles. **2023**, 104046
- 4 Machine learning-based automatic proton therapy planning: Impact of post-processing and dose-mimicking in plan robustness.
- 3 Consensus guide on CT-based prediction of stopping-power ratio using a Hounsfield look-up table for proton therapy. **2023**, 109675
- 2 Tissue-specific range uncertainty estimation in proton therapy. **2023**, 100441
- 1 Potential margin reduction in prostate cancer proton therapy with prompt gamma imaging for online treatment verification. **2023**, 100447