Simon Rit

List of Publications by Year
in descending order

105 papers	2,249 citations	257101 24 h-index	223531 46 g-index
106 all docs	106 docs citations	106 times ranked	2563 citing authors

#	ARTICLE	IF	CITATIONS
1	Evaluation of Registration Methods on Thoracic CT: The EMPIRE10 Challenge. IEEE Transactions on Medical Imaging, 2011, 30, 1901-1920.	5.4	363
2	The Reconstruction Toolkit (RTK), an open-source cone-beam CT reconstruction toolkit based on the Insight Toolkit (ITK). Journal of Physics: Conference Series, 2014, 489, 012079.	0.3	132
3	Spatiotemporal motion estimation for respiratory‐correlated imaging of the lungs. Medical Physics, 2011, 38, 166-178.	1.6	130
4	On‐the‐fly motion‐compensated cone‐beam CT using an <i>a priori</i> model of the respiratory motion. Medical Physics, 2009, 36, 2283-2296.	1.6	129
5	Investigating deformable image registration and scatter correction for CBCT‐based dose calculation in adaptive IMPT. Medical Physics, 2016, 43, 5635-5646.	1.6	92
6	Filtered backprojection proton CT reconstruction along most likely paths. Medical Physics, 2013, 40, 031103.	1.6	79
7	Is abdominal compression useful in lung stereotactic body radiation therapy? A 4DCT and dosimetric lobe-dependent study. Physica Medica, 2013, 29, 333-340.	0.4	74
8	Registration of sliding objects using direction dependent B-splines decomposition. Physics in Medicine and Biology, 2013, 58, 1303-1314.	1.6	68
9	Automated segmentation of a motion mask to preserve sliding motion in deformable registration of thoracic CT. Medical Physics, 2012, 39, 1006-1015.	1.6	67
10	Regularization of nonlinear decomposition of spectral x‐ray projection images. Medical Physics, 2017, 44, e174-e187.	1.6	65
11	Comparison of Analytic and Algebraic Methods for Motion-Compensated Cone-Beam CT Reconstruction of the Thorax. IEEE Transactions on Medical Imaging, 2009, 28, 1513-1525.	5.4	61
12	Experimental comparison of proton CT and dual energy x-ray CT for relative stopping power estimation in proton therapy. Physics in Medicine and Biology, 2019, 64, 165002.	1.6	58
13	Quantification of the Variability of Diaphragm Motion and Implications for Treatment Margin Construction. International Journal of Radiation Oncology Biology Physics, 2012, 82, e399-e407.	0.4	55
14	Comparison of five one-step reconstruction algorithms for spectral CT. Physics in Medicine and Biology, 2018, 63, 235001.	1.6	53
15	SPARE: Sparse‐view reconstruction challenge for 4D cone‐beam CT from a 1‐min scan. Medical Physics, 2019, 46, 3799-3811.	1.6	47
16	Comparative study of respiratory motion correction techniques in cone-beam computed tomography. Radiotherapy and Oncology, 2011, 100, 356-359.	0.3	39
17	Monte Carlo comparison of x-ray and proton CT for range calculations of proton therapy beams. Physics in Medicine and Biology, 2015, 60, 7585-7599.	1.6	39
18	Cardiac C‐arm computed tomography using a 3D + time ROI reconstruction method with spatial and temporal regularization. Medical Physics, 2014, 41, 021903.	1.6	32

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19	Decomposing a prior-CT-based cone-beam CT projection correction algorithm into scatter and beam hardening components. Physics and Imaging in Radiation Oncology, 2017, 3, 49-52.	1.2	32
20	A comprehensive theoretical comparison of proton imaging set-ups in terms of spatial resolution. Physics in Medicine and Biology, 2018, 63, 135013.	1.6	30
21	Motion-aware temporal regularization for improved 4D cone-beam computed tomography. Physics in Medicine and Biology, 2016, 61, 6856-6877.	1.6	29
22	Impact of probe pressure variability on prostate localization for ultrasound-based image-guided radiotherapy. Radiotherapy and Oncology, 2014, 111, 132-137.	0.3	27
23	Fast reconstruction of low dose proton CT by sinogram interpolation. Physics in Medicine and Biology, 2016, 61, 5868-5882.	1.6	25
24	Regularised patient-specific stopping power calibration for proton therapy planning based on proton radiographic images. Physics in Medicine and Biology, 2019, 64, 065008.	1.6	25
25	Evaluation of a new transperineal ultrasound probe for inter-fraction image-guidance for definitive and post-operative prostate cancer radiotherapy. Physica Medica, 2016, 32, 499-505.	0.4	24
26	Comparison of projection- and image-based methods for proton stopping power estimation using dual energy CT. Physics and Imaging in Radiation Oncology, 2017, 3, 28-36.	1.2	22
27	Split exponential track length estimator for Monte-Carlo simulations of small-animal radiation therapy. Physics in Medicine and Biology, 2014, 59, 7703-7715.	1.6	21
28	Two-dimensional noise reconstruction in proton computed tomography using distance-driven filtered back-projection of simulated projections. Physics in Medicine and Biology, 2018, 63, 215009.	1.6	21
29	Deformable image registration applied to lung SBRT: Usefulness and limitations. Physica Medica, 2017, 44, 108-112.	0.4	20
30	Application of fluence field modulation to proton computed tomography for proton therapy imaging. Physics in Medicine and Biology, 2017, 62, 6026-6043.	1.6	18
31	Material Decomposition in Spectral CT Using Deep Learning: A Sim2Real Transfer Approach. IEEE Access, 2021, 9, 25632-25647.	2.6	18
32	Towards Monte Carlo simulation of X-ray phase contrast using GATE. Optics Express, 2020, 28, 14522.	1.7	18
33	Ultrasound versus Cone-beam CT image-guided radiotherapy for prostate and post-prostatectomy pretreatment localization. Physica Medica, 2015, 31, 997-1004.	0.4	17
34	Filtered-backprojection reconstruction for a cone-beam computed tomography scanner with independent source and detector rotations. Medical Physics, 2016, 43, 2344-2352.	1.6	17
35	Experimental fluence-modulated proton computed tomography by pencil beam scanning. Medical Physics, 2018, 45, 3287-3296.	1.6	16
36	Technical Note: Relative proton stopping power estimation from virtual monoenergetic images reconstructed from dual-layer computed tomography. Medical Physics, 2019, 46, 1821-1828.	1.6	16

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37	Feasibility of 4DCBCT-based proton dose calculation: An ex vivo porcine lung phantom study. Zeitschrift Fur Medizinische Physik, 2019, 29, 249-261.	0.6	16
38	Respiratory Signal Extraction for 4D CT Imaging of the Thorax from Cone-Beam CT Projections. Lecture Notes in Computer Science, 2005, 8, 556-563.	1.0	14
39	2D/4D marker-free tumor tracking using 4D CBCT as the reference image. Physics in Medicine and Biology, 2014, 59, 2219-2233.	1.6	13
40	Filtered back-projection reconstruction for attenuation proton CT along most likely paths. Physics in Medicine and Biology, 2016, 61, 3258-3278.	1.6	13
41	Calibration for Circular Cone-Beam CT Based on Consistency Conditions. IEEE Transactions on Radiation and Plasma Medical Sciences, 2017, 1, 517-526.	2.7	13
42	A comparison of direct reconstruction algorithms in proton computed tomography. Physics in Medicine and Biology, 2020, 65, 105010.	1.6	13
43	On-the-Fly Motion-Compensated Cone-Beam CT Using an a Priori Motion Model. Lecture Notes in Computer Science, 2008, 11, 729-736.	1.0	13
44	Semiautomatic registration of 3D transabdominal ultrasound images for patient repositioning during postprostatectomy radiotherapy. Medical Physics, 2014, 41, 122903.	1.6	10
45	The role of Monte Carlo simulation in understanding the performance of proton computed tomography. Zeitschrift Fur Medizinische Physik, 2022, 32, 23-38.	0.6	10
46	An optimization algorithm for dose reduction with fluence‐modulated proton CT. Medical Physics, 2020, 47, 1895-1906.	1.6	10
47	Fixed forced detection for fast SPECT Monte-Carlo simulation. Physics in Medicine and Biology, 2018, 63, 055011.	1.6	9
48	Effects of transverse heterogeneities on the most likely path of protons. Physics in Medicine and Biology, 2019, 64, 065003.	1.6	8
49	Feasibility study of a proton CT system based on 4D-tracking and residual energy determination via time-of-flight. Physics in Medicine and Biology, 2022, 67, 095005.	1.6	8
50	Optimization of dual‐energy CT acquisitions for proton therapy using projection‐based decomposition. Medical Physics, 2017, 44, 4548-4558.	1.6	7
51	Registration of phase‐contrast images in propagation‐based X‐ray phase tomography. Journal of Microscopy, 2018, 269, 36-47.	0.8	7
52	Anthropomorphic lung phantom based validation of in-room proton therapy 4D-CBCT image correction for dose calculation. Zeitschrift Fur Medizinische Physik, 2020, 32, 74-74.	0.6	7
53	Scattering proton CT. Physics in Medicine and Biology, 2020, 65, 225015.	1.6	7
54	Projection-based dynamic tomography. Physics in Medicine and Biology, 2021, 66, 215018.	1.6	7

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55	Technical Note: Procedure for the calibration and validation of kilo€voltage cone€beam CT models. Medical Physics, 2016, 43, 5199-5204.	1.6	6
56	Data Consistency Conditions for Cone-Beam Projections on a Circular Trajectory. IEEE Signal Processing Letters, 2016, 23, 1746-1750.	2.1	6
57	Validation of proton dose calculation on scatter corrected 4D cone beam computed tomography using a porcine lung phantom. Physics in Medicine and Biology, 2021, 66, 175022.	1.6	6
58	In vivo gadolinium nanoparticle quantification with SPECT/CT. EJNMMI Physics, 2019, 6, 9.	1.3	5
59	Scatter Correction for Spectral CT Using a Primary Modulator Mask. IEEE Transactions on Medical Imaging, 2020, 39, 2267-2276.	5.4	5
60	Mid-position treatment strategy for locally advanced lung cancer: a dosimetric study. British Journal of Radiology, 2020, 93, 20190692.	1.0	5
61	Dose fractionation in synchrotron radiation x-ray phase micro-tomography. Physics in Medicine and Biology, 2015, 60, 7543-7566.	1.6	4
62	Deriving the mean excitation energy map from dual-energy and proton computed tomography. Physics and Imaging in Radiation Oncology, 2018, 6, 20-24.	1.2	4
63	SciFi detector and associated method for real€time determination of profile and output factor for small fields in stereotactic radiotherapy. Medical Physics, 2020, 47, 1930-1939.	1.6	4
64	Comparative accuracy and resolution assessment of two prototype proton computed tomography scanners. Medical Physics, 2022, 49, 4671-4681.	1.6	4
65	Learning directional relative positions between mediastinal lymph node stations and organs. Medical Physics, 2014, 41, 061905.	1.6	3
66	Removing streak artifacts from ECG-gated reconstructions using deconvolution. Journal of X-Ray Science and Technology, 2014, 22, 253-270.	0.7	3
67	Accurate Transaxial Region-of-Interest Reconstruction in Helical CT?. IEEE Transactions on Radiation and Plasma Medical Sciences, 2017, 1, 334-345.	2.7	3
68	Cone-beam projection of a deformable volume for motion compensated algebraic reconstruction. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 6544-7.	0.5	2
69	Gated cone-beam CT imaging of the thorax: a reconstruction study. , 2007, , .		2
70	Geometric tomography for measuring rectangular radiotherapy fields from six projections. , 2019, , .		2
71	Intensity-Based Deformable Registration: Introduction and Overview. Biological and Medical Physics Series, 2013, , 103-124.	0.3	2
72	Image quality of dual-energy cone-beam CT with total nuclear variation regularization. Biomedical Physics and Engineering Express, 2022, 8, 025012.	0.6	2

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73	Algebraic and analytic reconstruction methods for dynamic tomography. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 726-30.	0.5	1
74	INTRAFRACTION AND INTERFRACTION VARIABILITY OF THE RESPIRATORY MOTION AMPLITUDE. Radiotherapy and Oncology, 2009, 92, S35.	0.3	1
75	Towards 4DCT-US image fusion for liver motion monitoring. , 2013, , .		1
76	Estimation of respiratory breathing signal from 2D US sequences and 4DCT of the liver. , 2014, , .		1
77	In-room breathing motion estimation from limited projection views using a sliding deformation model. Journal of Physics: Conference Series, 2014, 489, 012026.	0.3	1
78	Binary tomography reconstruction from few projections with Total Variation regularization for bone microstructure studies. Journal of X-Ray Science and Technology, 2016, 24, 177-189.	0.7	1
79	Exact Fan-Beam Reconstruction With Arbitrary Object Translations and Truncated Projections. IEEE Transactions on Nuclear Science, 2016, 63, 1408-1418.	1.2	1
80	Optimized conversion from CT numbers to proton relative stopping power based on proton radiography and scatter corrected cone-beam CT images. , 2019, , .		1
81	SUâ€Eâ€J-147: Monte Carlo Study of the Precision and Accuracy of Proton CT Reconstructed Relative Stopping Power Maps. Medical Physics, 2015, 42, 3298-3298.	1.6	1
82	SUâ€Fâ€214: Dose Reduction by Spatially Optimized Image Quality Via Fluence Modulated Proton CT (FMpCT). Medical Physics, 2016, 43, 3458-3458.	1.6	1
83	Estimation of Radiotherapy Dose Fields from a Few Projections: How Many Projections will Ensure Uniqueness?. , 2020, , .		1
84	Motion detection in helical CT using data consistency conditions. , 2020, , .		1
85	Tiny changes in tomographic system matrices can cause large changes in reconstruction quality. Physics in Medicine and Biology, 2022, , .	1.6	1
86	Respiratory Signal Extraction for 4D CT Imaging of the Thorax from Cone-Beam CT Projections. International Journal of Radiation Oncology Biology Physics, 2005, 63, S533-S534.	0.4	0
87	On-the-Fly Motion-compensated Cone-beam CT using a Motion Model Updated via Navigator Channels. International Journal of Radiation Oncology Biology Physics, 2009, 75, S22.	0.4	0
88	245 oral COMPARISON OF DIFFERENT STRATEGIES FOR RESPIRATORY MOTION CORRECTION OF CONE-BEAM CT IN LUNG CANCER SBRT. Radiotherapy and Oncology, 2011, 99, S95.	0.3	0
89	248 oral 4DCT â€" HIGH QUALITY IMAGING AND CONTRAST ENHANCEMENT FOR 3D RADIOTHERAPY TREATMENT PLANNING. Radiotherapy and Oncology, 2011, 99, S96-S97.	0.3	0
90	Electron density resolution determination and systematic uncertainties in proton computed tomography (pCT). , 2012, , .		0

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91	Deconvolution for limited-view streak artifacts removal: improvements upon an existing approach. , 2012, , .		0
92	Motion artifact detection in four-dimensional computed tomography images. Journal of Physics: Conference Series, 2014, 489, 012024.	0.3	0
93	Analytic motion-compensated region-of-interest reconstruction from truncated projections. , 2014, , .		0
94	Realistic Simulations for the Evaluation of Monomodal Registration Algorithms of 3D Pelvic Ultrasound Images. Physics Procedia, 2015, 70, 1169-1172.	1.2	0
95	Development of 2D+T tracking algorithm in ultrasound images for radiotherapy. , 2015, 2015, 2916-9.		0
96	Abstract ID: 85 Investigating the physics of a CBCT projection shading correction based on a prior CT. Physica Medica, 2017, 42, 17-18.	0.4	0
97	Quantification of Gd-Nanoparticles Concentration with SPECT and Spectral Photon Counting CT. , 2017, , .		0
98	PO-0940: Porcine-lung-phantom based evaluation of proton dose calculations on 4DCBCT. Radiotherapy and Oncology, 2018, 127, S511.	0.3	0
99	EP-2013 Lung tumor motion based on 4D-CBCT: baseline shift, interfraction amplitude and volume variation. Radiotherapy and Oncology, 2019, 133, S1103.	0.3	0
100	Region-of-Interest CT Reconstruction Using Object Extent and Singular Value Decomposition. IEEE Transactions on Radiation and Plasma Medical Sciences, 2022, 6, 537-551.	2.7	0
101	Energy-adaptive calculation of the most likely path in proton CT. Physics in Medicine and Biology, 2021, 66, 20NT02.	1.6	0
102	Respiratory Motion Correction in Cone-Beam CT for Image-Guided Radiotherapy. Biological and Medical Physics Series, 2013, , 319-334.	0.3	0
103	MO-F-WAB-09: Improvement of Digitally Reconstructed Radiograph Quality of Thoracic 4D Cone Beam Computed Tomography. Medical Physics, 2013, 40, 411-411.	1.6	0
104	SU-F-J-186: Enabling Adaptive IMPT with CBCT-Based Dose Recalculation for H&N and Prostate Cancer Patients. Medical Physics, 2016, 43, 3451-3451.	1.6	0
105	Relative stopping power resolution in time-of-flight proton CT. Physics in Medicine and Biology, 2022, 67, 165004.	1.6	0