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Overview

Professor of Radiotherapy Physics. This is a joint post between the University of Manchester and the Christie. Marcel is responsible for developing a programme of international leading radiotherapy physics research and innovation to deliver direct patient benefits. The main focus is on accuracy of radiotherapy including target volume definition, treatment planning, image guidance and treatment follow-up.

Work Stream 4 for NCRI Clinical and Translational Radiotherapy Research (CTRad) Working Group

Employment

Chair in Radiotherapy Physics
Academic (Teaching & Research) Professor
Division of Cancer Sciences (L5)
The University of Manchester
1 Aug 2016 → present

Research outputs

137 - Using heart contour volume variability as natural experiment to test the effect heart sparing
van Herk, M., Abravan, A., Faivre-Finn, C. & McWilliam, A., 24 Apr 2023, (E-pub ahead of print) p. S59-S60. 2 p.

Efficient Visualisation of Changes in CBCT During Radiotherapy to Detect Lung Infections
van Herk, M., Price, G., Clough, A., Sanders, J., Faivre-Finn, C., Eccles, C. & Aznar, M., Jun 2021, In: *Medical Physics*. 48, 6

Making radiotherapy smarter
Van Herk, M. & Vasquez Osorio, E., 30 Jul 2019, (Accepted/In press) In: *Lancet Oncology*.

Comparing two web platforms for uncertainty simulation of external beam radiotherapy
Van Herk, M., Shortall, J., Robbins, J., Green, A. & Vasquez Osorio, E., 1 Jun 2019, *19th International Conference on the use of Computers in Radiation Therapy*. p. 99-100

Magnetic Resonance Imaging–Guided Radiation Therapy: A Short Strengths, Weaknesses, Opportunities, and Threats Analysis
van Herk, M., McWilliam, A., Dubec, M., Faivre-Finn, C. & Choudhury, A., 1 Aug 2018, In: *International Journal of Radiation Oncology Biology Physics*. 101, 5, p. 1057-1060 4 p.

Learning from every patient treated
Van Herk, M., Mcwilliam, A., Green, A., osorio, E. V., Beasley, W., Choudhury, A. & Faivre-Finn, C., 2018, In: *Physica Medica*. 52, p. 165 1 p.

MRI Guided Radiotherapy: A Short SWOT Analysis
van Herk, M., McWilliam, A., Dubec, M., Faivre-Finn, C. & Choudhury, A., 2017, *Imaging & Oncology*. London: Society and College of Radiographers, p. 20-27

EP-1844: Feasibility of generating mid-position CT from 4DCT using commercial deformable registration systems
Herk, M. V., McWilliam, A., Whitehurst, P. & Faivre-Finn, C., Apr 2016, In: Radiotherapy & Oncology.

Impact of daily anatomical changes on EPID-based in vivo dosimetry of VMAT treatments of head-and-neck cancer.
Van Herk, M., Rozendaal, R. A., Mijnheer, B. J., Hamming-Vrieze, O., Mans, A. & van Herk, M., 30 Jun 2015, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology.

Dynamic CT perfusion image data compression for efficient parallel processing.

Van Herk, M., Barros, R. S., Olabarriaga, S. D., Borst, J., van Walderveen, M. A. A., Posthuma, J. S., Streekstra, G. J., van Herk, M., Majoie, C. B. L. M. & Marquering, H. A., 24 Jun 2015, In: Medical & biological engineering & computing.

Establishing implantation uncertainties for focal brachytherapy with I-125 seeds for the treatment of localized prostate cancer.

Van Herk, M., Polders, D. L., Steggerda, M., van Herk, M., Nichol, K., Witteveen, T., Moonen, L., Nijkamp, J. & van der Heide, U. A., Jun 2015, In: Acta Oncologica . 54, 6

WE-D-BRA-04: Online 3D EPID-Based Dose Verification for Optimum Patient Safety.

Van Herk, M., Spreeuw, H., Rozendaal, R., Olaciregui-Ruiz, I., Mans, A., Mijnheer, B., van Herk, M. & Gonzalez, P., Jun 2015, In: Medical Physics. 42, 6

Dynamic collimator angle adjustments during volumetric modulated arc therapy to account for prostate rotations.

Van Herk, M., de Boer, J., Wolf, A. L., Szeto, Y. Z., van Herk, M. & Sonke, J.-J., 1 Apr 2015, In: International journal of radiation oncology, biology, physics. 91, 5

Acute toxicity after image-guided intensity modulated radiation therapy compared to 3D conformal radiation therapy in prostate cancer patients.

Van Herk, M., Wortel, R. C., Incrocci, L., Pos, F. J., Lebesque, J. V., Witte, M. G., van der Heide, U. A., van Herk, M. & Heemsbergen, W. D., 15 Mar 2015, In: International journal of radiation oncology, biology, physics. 91, 4

Target delineation variability and corresponding margins of peripheral early stage NSCLC treated with stereotactic body radiotherapy.

Van Herk, M., Peulen, H., Belderbos, J., Guckenberger, M., Hope, A., Grills, I., van Herk, M. & Sonke, J.-J., Mar 2015, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 114, 3

Toward adaptive radiotherapy for head and neck patients: Uncertainties in dose warping due to the choice of deformable registration algorithm.

Van Herk, M., Veiga, C., Lourenço, A. M., Mouinuddin, S., van Herk, M., Modat, M., Ourselin, S., Royle, G. & McClelland, J. R., Feb 2015, In: Medical Physics. 42, 2

Probabilistic evaluation of target dose deterioration in dose painting by numbers for stage II/III lung cancer.

Van Herk, M., Fontanarosa, D., Witte, M., Meijer, G., Shakirin, G., Steenhuijsen, J., Schuring, D., van Herk, M. & Lambin, P., 2015, In: Practical Radiation Oncology . 5, 4, p. 375-82 7 p.

Deformable image registration for adaptive radiation therapy of head and neck cancer: accuracy and precision in the presence of tumor changes.

Van Herk, M., Mencarelli, A., van Kranen, S. R., Hamming-Vrieze, O., van Beek, S., Nico Rasch, C. R., van Herk, M. & Sonke, J.-J., 1 Nov 2014, In: International journal of radiation oncology, biology, physics. 90, 3

Inter- and intra-fractional bladder motion during radiotherapy for bladder cancer: a comparison of full and empty bladders.

Van Herk, M., Dees-Ribbers, H. M., Betgen, A., Pos, F. J., Witteveen, T., Remeijer, P. & van Herk, M., Nov 2014, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 113, 2

Clinical implementation and rapid commissioning of an EPID based in-vivo dosimetry system.

Van Herk, M., Hanson, I. M., Hansen, V. N., Olaciregui-Ruiz, I. & van Herk, M., 7 Oct 2014, In: Physics in Medicine and Biology. 59, 19

4D CT amplitude binning for the generation of a time-averaged 3D mid-position CT scan.

Van Herk, M., Kruis, M. F., van de Kamer, J. B., Belderbos, J. S. A., Sonke, J.-J. & van Herk, M., 21 Sept 2014, In: Physics in Medicine and Biology. 59, 18, 5517.

In vivo portal dosimetry for head-and-neck VMAT and lung IMRT: linking γ -analysis with differences in dose-volume histograms of the PTV.

Van Herk, M., Rozendaal, R. A., Mijnheer, B. J., van Herk, M. & Mans, A., Sept 2014, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 112, 3

Improved image quality of cone beam CT scans for radiotherapy image guidance using fiber-interspaced antiscatter grid.

Van Herk, M., Stankovic, U., van Herk, M., Ploeger, L. S. & Sonke, J.-J., Jun 2014, In: Medical Physics. 41, 6

Automatic detection system for multiple region of interest registration to account for posture changes in head and neck radiotherapy.

Van Herk, M., Mencarelli, A., van Beek, S., Zijp, L. J., Rasch, C., van Herk, M. & Sonke, J.-J., 21 Apr 2014, In: Physics in Medicine and Biology. 59, 8

Leukemia and brain tumors among children after radiation exposure from CT scans: design and methodological opportunities of the Dutch Pediatric CT Study.

Van Herk, M., Meulepas, J. M., Ronckers, C. M., Smets, A. M. J. B., Nieuwstein, R. A. J., Jahnen, A., Lee, C., Kieft, M., Laméris, J. S., van Herk, M., Greuter, M. J. W., Jeukens, C. R. L. P. N., van Straten, M., Visser, O., van Leeuwen, F. E. & Hauptmann, M., Apr 2014, In: European journal of epidemiology. 29, 4

Occupancy of serotonin transporters in the amygdala by paroxetine in association with attenuation of left amygdala activation by negative faces in major depressive disorder.

Van Herk, M., Ruhé, H. G., Koster, M., Booij, J., van Herk, M., Veltman, D. J. & Schene, A. H., 28 Feb 2014, In: Psychiatry Research. 221, 2

Adaptive radiotherapy with an average anatomy model: evaluation and quantification of residual deformations in head and neck cancer patients.

Van Herk, M., van Kranen, S., Mencarelli, A., van Beek, S., Rasch, C., van Herk, M. & Sonke, J.-J., Dec 2013, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 109, 3

An in silico comparison between margin-based and probabilistic target-planning approaches in head and neck cancer patients.

Van Herk, M., Fontanarosa, D., van der Laan, H. P., Witte, M., Shakirin, G., Roelofs, E., Langendijk, J. A., Lambin, P. & van Herk, M., Dec 2013, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 109, 3

Motion compensated digital tomosynthesis.

Van Herk, M., van der Reijden, A., van Herk, M. & Sonke, J.-J., Dec 2013, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 109, 3

Registration accuracy and image quality of time averaged mid-position CT scans for liver SBRT.

Van Herk, M., Kruis, M. F., van de Kamer, J. B., Sonke, J.-J., Jansen, E. P. M. & van Herk, M., Dec 2013, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 109, 3

Automatic in vivo portal dosimetry of all treatments.

Van Herk, M., Olaciregui-Ruiz, I., Rozendaal, R., Mijnheer, B., van Herk, M. & Mans, A., 21 Nov 2013, In: Physics in Medicine and Biology. 58, 22

PET motion compensation for radiation therapy using a CT-based mid-position motion model: methodology and clinical evaluation.

Van Herk, M., Kruis, M. F., van de Kamer, J. B., Houweling, A. C., Sonke, J.-J., Belderbos, J. S. A. & van Herk, M., 1 Oct 2013, In: International journal of radiation oncology, biology, physics. 87, 2

Probabilistic objective functions for margin-less IMRT planning.

Van Herk, M., Bohoslavsky, R., Witte, M. G., Janssen, T. M. & van Herk, M., 7 Jun 2013, In: Physics in Medicine and Biology. 58, 11

Hybrid registration of prostate and seminal vesicles for image guided radiation therapy.

Van Herk, M., de Boer, J., van Herk, M., Pos, F. J. & Sonke, J.-J., 1 May 2013, In: International journal of radiation oncology, biology, physics. 86, 1

Fusion of planning CT and cystoscopy images for bladder tumor delineation: a feasibility study.

Van Herk, M., Dees-Ribbers, H. M., Pos, F. J., Betgen, A., Bex, A., Hulshof, M. C. C. M., Remeijer, P. & van Herk, M., May 2013, In: Medical Physics. 40, 5

Radiotherapy with rectangular fields is associated with fewer clinical failures than conformal fields in the high-risk prostate cancer subgroup: results from a randomized trial.

Van Herk, M., Heemsbergen, W. D., Al-Mamgani, A., Witte, M. G., van Herk, M. & Lebesque, J. V., May 2013, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 107, 2

Multiple comparisons permutation test for image based data mining in radiotherapy.

Van Herk, M., Chen, C., Witte, M., Heemsbergen, W. & van Herk, M., 2013, In: Radiation Oncology . 8

Semiautomatic bladder segmentation on CBCT using a population-based model for multiple-plan ART of bladder cancer.

Van Herk, M., Chai, X., van Herk, M., Betgen, A., Hulshof, M. & Bel, A., 21 Dec 2012, In: Physics in Medicine and Biology. 57, 24

Adaptive margin radiotherapy for patients with prostate carcinoma: what's the benefit?

Van Herk, M., Haverkort, M. A. D., van de Kamer, J. B., Pieters, B. R., Koning, C. C. E., van Herk, M. & van Tienhoven, G., Nov 2012, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 105, 2

Validation of deformable registration in head and neck cancer using analysis of variance.

Van Herk, M., Mencarelli, A., van Beek, S., van Kranen, S., Rasch, C., van Herk, M. & Sonke, J.-J., Nov 2012, In: Medical Physics. 39, 11

Influence of the number of elongated fiducial markers on the localization accuracy of the prostate.

Van Herk, M., de Boer, J., de Bois, J., van Herk, M. & Sonke, J.-J., 7 Oct 2012, In: Physics in Medicine and Biology. 57, 19

Acute esophagus toxicity in lung cancer patients after intensity modulated radiation therapy and concurrent chemotherapy.

Van Herk, M., Kwint, M., Uytterlinde, W., Nijkamp, J., Chen, C., de Bois, J., Sonke, J.-J., van den Heuvel, M., Knegjens, J., van Herk, M. & Belderbos, J., 1 Oct 2012, In: International journal of radiation oncology, biology, physics. 84, 2

Evaluation of tumor shape variability in head-and-neck cancer patients over the course of radiation therapy using implanted gold markers.

Van Herk, M., Hamming-Vrieze, O., van Kranen, S. R., van Beek, S., Heemsbergen, W., van Herk, M., van den Brekel, M. W. M., Sonke, J.-J. & Rasch, C. R. N., 1 Oct 2012, In: International journal of radiation oncology, biology, physics. 84, 2

Automatic bladder segmentation on CBCT for multiple plan ART of bladder cancer using a patient-specific bladder model.

Van Herk, M., Chai, X., van Herk, M., Betgen, A., Hulshof, M. & Bel, A., 21 Jun 2012, In: Physics in Medicine and Biology. 57, 12

Adaptive radiotherapy for long course neo-adjuvant treatment of rectal cancer.

Van Herk, M., Nijkamp, J., Marijnen, C., van Herk, M., van Triest, B. & Sonke, J.-J., Jun 2012, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 103, 3

Contrast-enhanced ultrasound as support for prostate brachytherapy treatment planning.

Van Herk, M., Pieters, B., Wijkstra, H., van Herk, M., Kuipers, R., Kaljouw, E., de la Rosette, J. & Koning, C., Jun 2012, In: *Journal of contemporary brachytherapy*. 4, 2

Quantification of the variability of diaphragm motion and implications for treatment margin construction.

Van Herk, M., Rit, S., van Herk, M., Zijp, L. & Sonke, J.-J., 1 Mar 2012, In: *International journal of radiation oncology, biology, physics*. 82, 3

Repeat CT assessed CTV variation and PTV margins for short- and long-course pre-operative RT of rectal cancer.

Van Herk, M., Nijkamp, J., Swellengrebel, M., Hollmann, B., de Jong, R., Marijnen, C., van Vliet-Vroegindeweij, C., van Triest, B., van Herk, M. & Sonke, J.-J., Mar 2012, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 102, 3

A practical technique to avoid the hippocampus in prophylactic cranial irradiation for lung cancer.

Van Herk, M., van Kesteren, Z., Belderbos, J., van Herk, M., Olszewska, A., Lamers, E., De Ruyscher, D., Damen, E. & van Vliet-Vroegindeweij, C., Feb 2012, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 102, 2

A voxel-based finite element model for the prediction of bladder deformation.

Van Herk, M., Chai, X., van Herk, M., Hulshof, M. C. C. M. & Bel, A., Jan 2012, In: *Medical Physics*. 39, 1

In aqua vivo EPID dosimetry.

Van Herk, M., Wendling, M., McDermott, L. N., Mans, A., Olaciregui-Ruiz, I., Pecharromán-Gallego, R., Sonke, J.-J., Stroom, J., van Herk, M. & Mijnheer, B. J., Jan 2012, In: *Medical Physics*. 39, 1

Target volume delineation variation in radiotherapy for early stage rectal cancer in the Netherlands.

Van Herk, M., Nijkamp, J., de Haas-Kock, D. F. M., Beukema, J. C., Neelis, K. J., Woutersen, D., Ceha, H., Rozema, T., Slot, A., Vos-Westerman, H., Intven, M., Spruit, P. H., van der Linden, Y., Geijsen, D., Verschueren, K., van Herk, M. B. & Marijnen, C. A. M., Jan 2012, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 102, 1

A novel method for megavoltage scatter correction in cone-beam CT acquired concurrent with rotational irradiation.

Van Herk, M., van Herk, M., Ploeger, L. & Sonke, J.-J., Sept 2011, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 100, 3

Comparative study of respiratory motion correction techniques in cone-beam computed tomography.

Van Herk, M., Rit, S., Nijkamp, J., van Herk, M. & Sonke, J.-J., Sept 2011, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 100, 3

Dealing with geometric uncertainties in dose painting by numbers: introducing the ΔVH.

Van Herk, M., Witte, M., Shakirin, G., Houweling, A., Peulen, H. & van Herk, M., Sept 2011, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 100, 3

Semi-automatic delineation using weighted CT-MRI registered images for radiotherapy of nasopharyngeal cancer.

Van Herk, M., Fitton, I., Cornelissen, S. A. P., Duppen, J. C., Steenbakkers, R. J. H. M., Peeters, S. T. H., Hoebers, F. J. P., Kaanders, J. H. A. M., Nowak, P. J. C. M., Rasch, C. R. N. & van Herk, M., Aug 2011, In: *Medical Physics*. 38, 8

Position verification for the prostate: effect on rectal wall dose.

Van Herk, M., Haverkort, M. A. D., van de Kamer, J. B., Pieters, B. R., van Tienhoven, G., Assendelft, E., Lensing, A. L., van Herk, M., de Reijke, T. M., Stoker, J. & Koning, C. C. E., 1 Jun 2011, In: *International journal of radiation oncology, biology, physics*. 80, 2

Residual seminal vesicle displacement in marker-based image-guided radiotherapy for prostate cancer and the impact on margin design.

Van Herk, M., Smitsmans, M. H. P., de Bois, J., Sonke, J.-J., Catton, C. N., Jaffray, D. A., Lebesque, J. V. & van Herk, M., 1 Jun 2011, In: International journal of radiation oncology, biology, physics. 80, 2

Effects of setup errors and shape changes on breast radiotherapy.

Van Herk, M., van Mourik, A., van Kranen, S., den Hollander, S., Sonke, J.-J., van Herk, M. & van Vliet-Vroegindeweij, C., 1 Apr 2011, In: International journal of radiation oncology, biology, physics. 79, 5

Serotonin and dopamine transporters in relation to neuropsychological functioning, personality traits and mood in young adult healthy subjects.

Van Herk, M., Burke, S. M., van de Giessen, E., de Win, M., Schilt, T., van Herk, M., van den Brink, W. & Booij, J., Feb 2011, In: Psychological Medicine. 41, 2

Simplifying EPID dosimetry for IMRT treatment verification.

Van Herk, M., Pecharromán-Gallego, R., Mans, A., Sonke, J.-J., Stroom, J. C., Olaciregui-Ruiz, I., van Herk, M. & Mijnheer, B. J., Feb 2011, In: Medical Physics. 38, 2

Finite element based bladder modeling for image-guided radiotherapy of bladder cancer.

Van Herk, M., Chai, X., van Herk, M., van de Kamer, J. B., Hulshof, M. C. C. M., Remeijer, P., Lotz, H. T. & Bel, A., Jan 2011, In: Medical Physics. 38, 1

Urinary obstruction in prostate cancer patients from the Dutch trial (68 Gy vs. 78 Gy): relationships with local dose, acute effects, and baseline characteristics.

Van Herk, M., Heemsbergen, W. D., Al-Mamgani, A., Witte, M. G., van Herk, M., Pos, F. J. & Lebesque, J. V., 1 Sept 2010 , In: International journal of radiation oncology, biology, physics. 78, 1

Catching errors with in vivo EPID dosimetry.

Van Herk, M., Mans, A., Wendling, M., McDermott, L. N., Sonke, J. J., Tielenburg, R., Vijlbrief, R., Mijnheer, B., van Herk, M. & Stroom, J. C., Jun 2010, In: Medical Physics. 37, 6

Behavior of lipiodol markers during image guided radiotherapy of bladder cancer.

Van Herk, M., Chai, X., van Herk, M., van de Kamer, J. B., Remeijer, P., Bex, A., Betgen, A., De Reijke, T. M., Hulshof, M. C. C. M., Pos, F. J. & Bel, A., 1 May 2010, In: International journal of radiation oncology, biology, physics. 77, 1

Relating dose outside the prostate with freedom from failure in the Dutch trial 68 Gy vs. 78 Gy.

Van Herk, M., Witte, M. G., Heemsbergen, W. D., Bohoslavsky, R., Pos, F. J., Al-Mamgani, A., Lebesque, J. V. & van Herk, M., 1 May 2010, In: International journal of radiation oncology, biology, physics. 77, 1

3D Dosimetric verification of volumetric-modulated arc therapy by portal dosimetry.

Van Herk, M., Mans, A., Remeijer, P., Olaciregui-Ruiz, I., Wendling, M., Sonke, J.-J., Mijnheer, B., van Herk, M. & Stroom, J. C., Feb 2010, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 94, 2

Correction strategies to manage deformations in head-and-neck radiotherapy.

Van Herk, M., van Kranen, S., van Beek, S., Mencarelli, A., Rasch, C., van Herk, M. & Sonke, J.-J., Feb 2010, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 94, 2

First clinical experience with a multiple region of interest registration and correction method in radiotherapy of head-and-neck cancer patients.

Van Herk, M., van Beek, S., van Kranen, S., Mencarelli, A., Remeijer, P., Rasch, C., van Herk, M. & Sonke, J.-J., Feb 2010, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 94, 2

Decreased 3D observer variation with matched CT-MRI, for target delineation in Nasopharynx cancer.

Van Herk, M., Rasch, C. R. N., Steenbakkers, R. J. H. M., Fitton, I., Duppen, J. C., Nowak, P. J. C. M., Pameijer, F. A., Eisbruch, A., Kaanders, J. H. A. M., Paulsen, F. & van Herk, M., 2010, In: Radiation Oncology . 5

Strategies for online organ motion correction for intensity-modulated radiotherapy of prostate cancer: prostate, rectum, and bladder dose effects.

Van Herk, M., Rijkhorst, E.-J., Lakeman, A., Nijkamp, J., de Bois, J., van Herk, M., Lebesque, J. V. & Sonke, J.-J., 15 Nov 2009, In: International journal of radiation oncology, biology, physics. 75, 4

Lipiodol injection for target volume delineation and image guidance during radiotherapy for bladder cancer.

Van Herk, M., Pos, F., Bex, A., Dees-Ribbers, H. M., Betgen, A., van Herk, M. & Remeijer, P., Nov 2009, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 93, 2

Effects of respiration-induced density variations on dose distributions in radiotherapy of lung cancer.

Van Herk, M., Mexner, V., Wolthaus, J. W. H., van Herk, M., Damen, E. M. F. & Sonke, J.-J., 15 Jul 2009, In: International journal of radiation oncology, biology, physics. 74, 4

A simple backprojection algorithm for 3D in vivo EPID dosimetry of IMRT treatments.

Van Herk, M., Wendling, M., McDermott, L. N., Mans, A., Sonke, J.-J., van Herk, M. & Mijnheer, B. J., Jul 2009, In: Medical Physics. 36, 7

Frameless stereotactic body radiotherapy for lung cancer using four-dimensional cone beam CT guidance.

Van Herk, M., Sonke, J.-J., Rossi, M., Wolthaus, J., van Herk, M., Damen, E. & Belderbos, J., 1 Jun 2009, In: International journal of radiation oncology, biology, physics. 74, 2

On-the-fly motion-compensated cone-beam CT using an a priori model of the respiratory motion.

Van Herk, M., Rit, S., Wolthaus, J. W. H., van Herk, M. & Sonke, J.-J., Jun 2009, In: Medical Physics. 36, 6

Setup uncertainties of anatomical sub-regions in head-and-neck cancer patients after offline CBCT guidance.

Van Herk, M., van Kranen, S., van Beek, S., Rasch, C., van Herk, M. & Sonke, J.-J., 1 Apr 2009, In: International journal of radiation oncology, biology, physics. 73, 5

Detection of in vivo dynamic 3-D motion patterns in the wrist joint.

Van Herk, M., Carelsen, B., Jonges, R., Strackee, S. D., Maas, M., van Kemenade, P., Grimbergen, C. A., van Herk, M. & Streekstra, G. J., Apr 2009, In: IEEE transactions on bio-medical engineering. 56, 4

Reconstruction of a time-averaged midposition CT scan for radiotherapy planning of lung cancer patients using deformable registration.

Van Herk, M., Wolthaus, J. W. H., Sonke, J. J., van Herk, M. & Damen, E. M. F., Sept 2008, In: Medical Physics. 35, 9

The influence of a dietary protocol on cone beam CT-guided radiotherapy for prostate cancer patients.

Van Herk, M., Smitsmans, M. H. P., Pos, F. J., de Bois, J., Heemsbergen, W. D., Sonke, J.-J., Lebesque, J. V. & van Herk, M., 15 Jul 2008, In: International journal of radiation oncology, biology, physics. 71, 4

Impact of anatomical location on value of CT-PET co-registration for delineation of lung tumors.

Van Herk, M., Fitton, I., Steenbakkers, R. J. H. M., Gilhuijs, K., Duppen, J. C., Nowak, P. J. C. M., van Herk, M. & Rasch, C. R. N., 1 Apr 2008, In: International journal of radiation oncology, biology, physics. 70, 5

99mTc Hynic-rh-Annexin V scintigraphy for in vivo imaging of apoptosis in patients with head and neck cancer treated with chemoradiotherapy.

Van Herk, M., Hoebers, F. J. P., Kartachova, M., de Bois, J., van den Brekel, M. W. M., van Tinteren, H., van Herk, M., Rasch, C. R. N., Valdés Olmos, R. A. & Verheij, M., Mar 2008, In: European Journal of Nuclear Medicine and Molecular Imaging. 35, 3

Variability of four-dimensional computed tomography patient models.

Van Herk, M., Sonke, J.-J., Lebesque, J. & van Herk, M., 1 Feb 2008, In: International journal of radiation oncology, biology, physics. 70, 2

3D in vivo dose verification of entire hypo-fractionated IMRT treatments using an EPID and cone-beam CT.

Van Herk, M., McDermott, L. N., Wendling, M., Nijkamp, J., Mans, A., Sonke, J.-J., Mijnheer, B. J. & van Herk, M., Jan 2008, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 86, 1

99mTc-HYNIC-rh-annexin-V scintigraphy: visual and quantitative evaluation of early treatment-induced apoptosis to predict treatment outcome.

Van Herk, M., Kartachova, M. S., Valdés Olmos, R. A., Haas, R. L. M., Hoebers, F. J. P., van Herk, M. & Verheij, M., Jan 2008, In: Nuclear Medicine Communications. 29, 1

On-the-fly motion-compensated cone-beam CT using an a priori motion model.

Van Herk, M., Rit, S., Wolthaus, J., van Herk, M. & Sonke, J.-J., 2008, In: Medical image computing and computer-assisted intervention : MICCAI ... International Conference on Medical Image Computing and Computer-Assisted Intervention. 11, Pt 1

Will IGRT live up to its promise?

Van Herk, M., 2008, In: Acta Oncologica . 47, 7, p. 1186-7 2 p.

Different styles of image-guided radiotherapy.

Van Herk, M. & van Herk, M., Oct 2007, In: Seminars in Radiation Oncology. 17, 4

IMRT optimization including random and systematic geometric errors based on the expectation of TCP and NTCP.

Van Herk, M., Witte, M. G., van der Geer, J., Schneider, C., Lebesque, J. V., Alber, M. & van Herk, M., Sept 2007, In: Medical Physics. 34, 9

A fast algorithm for gamma evaluation in 3D.

Van Herk, M., Wendling, M., Zijp, L. J., McDermott, L. N., Smit, E. J., Sonke, J.-J., Mijnheer, B. J. & van Herk, M., May 2007, In: Medical Physics. 34, 5

An adaptive off-line procedure for radiotherapy of prostate cancer.

Van Herk, M., Nuver, T. T., Hoogeman, M. S., Remeijer, P., van Herk, M. & Lebesque, J. V., 1 Apr 2007, In: International journal of radiation oncology, biology, physics. 67, 5

Replacing pretreatment verification with in vivo EPID dosimetry for prostate IMRT.

Van Herk, M., McDermott, L. N., Wendling, M., Sonke, J.-J., van Herk, M. & Mijnheer, B. J., 1 Apr 2007, In: International journal of radiation oncology, biology, physics. 67, 5

Retrospective attenuation correction of PET data for radiotherapy planning using a free breathing CT.

Van Herk, M., Fitton, I., Steenbakkers, R. J. H. M., Zijp, L., Duppen, J. C., Comans, E. F. I., Muller, S. H., Nowak, P. J. C. M., Rasch, C. R. N. & van Herk, M., Apr 2007, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 83, 1

Three-dimensional heart dose reconstruction to estimate normal tissue complication probability after breast irradiation using portal dosimetry.

Van Herk, M., Louwe, R. J. W., Wendling, M., van Herk, M. B. & Mijnheer, B. J., Apr 2007, In: Medical Physics. 34, 4

Clinical experience with EPID dosimetry for prostate IMRT pre-treatment dose verification.

Van Herk, M., McDermott, L. N., Wendling, M., van Asselen, B., Stroom, J., Sonke, J. J., van Herk, M. & Mijnheer, B. J., Oct 2006, In: Medical Physics. 33, 10

Mid-ventilation CT scan construction from four-dimensional respiration-correlated CT scans for radiotherapy planning of lung cancer patients.

Van Herk, M., Wolthaus, J. W. H., Schneider, C., Sonke, J.-J., van Herk, M., Belderbos, J. S. A., Rossi, M. M. G., Lebesque, J. V. & Damen, E. M. F., 1 Aug 2006, In: International journal of radiation oncology, biology, physics. 65, 5

Short-term and long-term reproducibility of lung tumor position using active breathing control (ABC).

Van Herk, M., Kashani, R., Koshani, R., Balter, J. M., Hayman, J. A., Henning, G. T. & van Herk, M., 1 Aug 2006, In: International journal of radiation oncology, biology, physics. 65, 5

Comparison of ghosting effects for three commercial a-Si EPIDs.

Van Herk, M., McDermott, L. N., Nijsten, S. M. J. J. G., Sonke, J.-J., Partridge, M., van Herk, M. & Mijnheer, B. J., Jul 2006, In: Medical Physics. 33, 7

Anatomy changes in radiotherapy detected using portal imaging.

Van Herk, M., McDermott, L. N., Wendling, M., Sonke, J.-J., van Herk, M. & Mijnheer, B. J., May 2006, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 79, 2

Tumor motion and deformation during external radiotherapy of bladder cancer.

Van Herk, M., Lotz, H. T., Pos, F. J., Hulshof, M. C. C. M., van Herk, M., Lebesque, J. V., Duppen, J. C. & Remeijer, P., 1 Apr 2006, In: International journal of radiation oncology, biology, physics. 64, 5

Reduction of observer variation using matched CT-PET for lung cancer delineation: a three-dimensional analysis.

Van Herk, M., Steenbakkers, R. J. H. M., Duppen, J. C., Fitton, I., Deurloo, K. E. I., Zijp, L. J., Comans, E. F. I., Uitterhoeve, A. L. J., Rodrigus, P. T. R., Kramer, G. W. P., Bussink, J., De Jaeger, K., Belderbos, J. S. A., Nowak, P. J. C. M., van Herk, M. & Rasch, C. R. N., 1 Feb 2006, In: International journal of radiation oncology, biology, physics. 64, 2

Accurate two-dimensional IMRT verification using a back-projection EPID dosimetry method.

Van Herk, M., Wendling, M., Louwe, R. J. W., McDermott, L. N., Sonke, J.-J., van Herk, M. & Mijnheer, B. J., Feb 2006, In: Medical Physics. 33, 2

Automatic prostate localization on cone-beam CT scans for high precision image-guided radiotherapy.

Van Herk, M., Smitsmans, M. H. P., de Bois, J., Sonke, J.-J., Betgen, A., Zijp, L. J., Jaffray, D. A., Lebesque, J. V. & van Herk, M., 15 Nov 2005, In: International journal of radiation oncology, biology, physics. 63, 4

Observer variation in target volume delineation of lung cancer related to radiation oncologist-computer interaction: a 'Big Brother' evaluation.

Van Herk, M., Steenbakkers, R. J. H. M., Duppen, J. C., Fitton, I., Deurloo, K. E. I., Zijp, L., Uitterhoeve, A. L. J., Rodrigus, P. T. R., Kramer, G. W. P., Bussink, J., De Jaeger, K., Belderbos, J. S. A., Hart, A. A. M., Nowak, P. J. C. M., van Herk, M. & Rasch, C. R. N., Nov 2005, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 77, 2

Reproducibility of the bladder shape and bladder shape changes during filling.

Van Herk, M., Lotz, H. T., van Herk, M., Betgen, A., Pos, F., Lebesque, J. V. & Remeijer, P., Aug 2005, In: Medical Physics. 32, 8

Target definition in prostate, head, and neck.

Van Herk, M., Rasch, C., Steenbakkers, R. & van Herk, M., Jul 2005, In: Seminars in Radiation Oncology. 15, 3

The applicability of simultaneous TRUS-CT imaging for the evaluation of prostate seed implants.

Van Herk, M., Steggerda, M., Schneider, C., van Herk, M., Zijp, L., Moonen, L. & van der Poel, H., Jul 2005, In: Medical Physics. 32, 7

The sensitivity of dose distributions for organ motion and set-up uncertainties in prostate IMRT.

Van Herk, M., Bos, L. J., van der Geer, J., van Herk, M., Mijnheer, B. J., Lebesque, J. V. & Damen, E. M. F., Jul 2005, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 76, 1

Fusion of respiration-correlated PET and CT scans: correlated lung tumour motion in anatomical and functional scans.

Van Herk, M., Wolthaus, J. W. H., van Herk, M., Muller, S. H., Belderbos, J. S. A., Lebesque, J. V., de Bois, J. A., Rossi, M. M. G. & Damen, E. M. F., 7 Apr 2005, In: Physics in Medicine and Biology. 50, 7

Respiratory correlated cone beam CT.

Van Herk, M., Sonke, J.-J., Zijp, L., Remeijer, P. & van Herk, M., Apr 2005, In: *Medical Physics*. 32, 4

Strategies to reduce the systematic error due to tumor and rectum motion in radiotherapy of prostate cancer.

Van Herk, M., Hoogeman, M. S., van Herk, M., de Bois, J. & Lebesque, J. V., Feb 2005, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 74, 2

Quantification of shape variation of prostate and seminal vesicles during external beam radiotherapy.

Van Herk, M., Deurloo, K. E. I., Steenbakkers, R. J. H. M., Zijp, L. J., de Bois, J. A., Nowak, P. J. C. M., Rasch, C. R. N. & van Herk, M., 1 Jan 2005, In: *International journal of radiation oncology, biology, physics*. 61, 1

Impact of knee support and shape of tabletop on rectum and prostate position.

Van Herk, M., Steenbakkers, R. J. H. M., Duppen, J. C., Betgen, A., Lotz, H. T., Remeijer, P., Fitton, I., Nowak, P. J. C. M., van Herk, M. & Rasch, C. R. N., 1 Dec 2004, In: *International journal of radiation oncology, biology, physics*. 60, 5

The effects of target size and tissue density on the minimum margin required for random errors.

Van Herk, M., Witte, M. G., van der Geer, J., Schneider, C., Lebesque, J. V. & van Herk, M., Nov 2004, In: *Medical Physics*. 31, 11

The long-term stability of amorphous silicon flat panel imaging devices for dosimetry purposes.

Van Herk, M., Louwe, R. J. W., McDermott, L. N., Sonke, J. J., Tielenburg, R., Wendling, M., van Herk, M. B. & Mijnheer, B. J., Nov 2004, In: *Medical Physics*. 31, 11

Automatic localization of the prostate for on-line or off-line image-guided radiotherapy.

Van Herk, M., Smitsmans, M. H. P., Wolthaus, J. W. H., Artignan, X., de Bois, J., Jaffray, D. A., Lebesque, J. V. & van Herk, M., 1 Oct 2004, In: *International journal of radiation oncology, biology, physics*. 60, 2

A model to predict bladder shapes from changes in bladder and rectal filling.

Van Herk, M., Lotz, H. T., Remeijer, P., van Herk, M., Lebesque, J. V., de Bois, J. A., Zijp, L. J. & Moonen, L. M., Jun 2004, In: *Medical Physics*. 31, 6

The stability of liquid-filled matrix ionization chamber electronic portal imaging devices for dosimetry purposes.

Van Herk, M., Louwe, R. J. W., Tielenburg, R., van Ingen, K. M., Mijnheer, B. J. & van Herk, M. B., Apr 2004, In: *Medical Physics*. 31, 4

Dose-response and ghosting effects of an amorphous silicon electronic portal imaging device.

Van Herk, M., McDermott, L. N., Louwe, R. J. W., Sonke, J. J., van Herk, M. B. & Mijnheer, B. J., Feb 2004, In: *Medical Physics*. 31, 2

Leaf trajectory verification during dynamic intensity modulated radiotherapy using an amorphous silicon flat panel imager.

Van Herk, M., Sonke, J.-J., Ploeger, L. S., Brand, B., Smitsmans, M. H. P. & van Herk, M., Feb 2004, In: *Medical Physics*. 31, 2

Errors and margins in radiotherapy.

Van Herk, M. & van Herk, M., Jan 2004, In: *Seminars in Radiation Oncology*. 14, 1

Quantification of local rectal wall displacements by virtual rectum unfolding.

Van Herk, M., Hoogeman, M. S., van Herk, M., de Bois, J., Muller-Timmersmans, P., Koper, P. C. M. & Lebesque, J. V., Jan 2004, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 70, 1

Biologic and physical fractionation effects of random geometric errors.

Van Herk, M., van Herk, M., Witte, M., van der Geer, J., Schneider, C. & Lebesque, J. V., 1 Dec 2003, In: *International journal of radiation oncology, biology, physics*. 57, 5

Reduction of dose delivered to the rectum and bulb of the penis using MRI delineation for radiotherapy of the prostate.
Van Herk, M., Steenbakkers, R. J. H. M., Deurloo, K. E. I., Nowak, P. J. C. M., Lebesque, J. V., van Herk, M. & Rasch, C. R. N., 1 Dec 2003, In: International journal of radiation oncology, biology, physics. 57, 5

Application of video imaging for improvement of patient set-up.

Van Herk, M., Ploeger, L. S., Frenay, M., Betgen, A., de Bois, J. A., Gilhuijs, K. G. A. & van Herk, M., Sept 2003, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 68, 3

Three-dimensional dose reconstruction of breast cancer treatment using portal imaging.

Van Herk, M., Louwe, R. J. W., Damen, E. M. F., van Herk, M., Minken, A. W. H., Törzsök, O. & Mijnheer, B. J., Sept 2003 , In: Medical Physics. 30, 9

Focal spot motion of linear accelerators and its effect on portal image analysis.

Van Herk, M., Sonke, J.-J., Brand, B. & van Herk, M., Jun 2003, In: Medical Physics. 30, 6

The theoretical benefit of beam fringe compensation and field size reduction for iso-normal tissue complication probability dose escalation in radiotherapy of lung cancer.

Van Herk, M., Engelsman, M., Remeijer, P., van Herk, M., Mijnheer, B. & Damen, E., Jun 2003, In: Medical Physics. 30, 6

Evaluation of cost functions for gray value matching of two-dimensional images in radiotherapy.

Van Herk, M., Dekker, N., Ploeger, L. S. & van Herk, M., May 2003, In: Medical Physics. 30, 5

Feasibility of geometrical verification of patient set-up using body contours and computed tomography data.

Van Herk, M., Ploeger, L. S., Betgen, A., Gilhuijs, K. G. A. & van Herk, M., Feb 2003, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 66, 2

Portal imaging to assess set-up errors, tumor motion and tumor shrinkage during conformal radiotherapy of non-small cell lung cancer.

Van Herk, M., Erridge, S. C., Seppenwoolde, Y., Muller, S. H., van Herk, M., De Jaeger, K., Belderbos, J. S. A., Boersma, L. J. & Lebesque, J. V., Jan 2003, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 66, 1

When should systematic patient positioning errors in radiotherapy be corrected?

Van Herk, M., Bortfeld, T., van Herk, M. & Jiang, S. B., 7 Dec 2002, In: Physics in Medicine and Biology. 47, 23

A model to simulate day-to-day variations in rectum shape.

Van Herk, M., Hoogeman, M. S., van Herk, M., Yan, D., Boersma, L. J., Koper, P. C. M. & Lebesque, J. V., 1 Oct 2002, In: International journal of radiation oncology, biology, physics. 54, 2

The effect of set-up uncertainties, contour changes, and tissue inhomogeneities on target dose-volume histograms.

Van Herk, M., Cho, B. C. J., van Herk, M., Mijnheer, B. J. & Bartelink, H., Oct 2002, In: Medical Physics. 29, 10

Precise and real-time measurement of 3D tumor motion in lung due to breathing and heartbeat, measured during radiotherapy.

Van Herk, M., Seppenwoolde, Y., Shirato, H., Kitamura, K., Shimizu, S., van Herk, M., Lebesque, J. V. & Miyasaka, K., 15 Jul 2002, In: International journal of radiation oncology, biology, physics. 53, 4

Margins for translational and rotational uncertainties: a probability-based approach.

Van Herk, M., Remeijer, P., Rasch, C., Lebesque, J. V. & van Herk, M., 1 Jun 2002, In: International journal of radiation oncology, biology, physics. 53, 2

A method for geometrical verification of dynamic intensity modulated radiotherapy using a scanning electronic portal imaging device.

Van Herk, M., Ploeger, L. S., Smitsmans, M. H. P., Gilhuijs, K. G. A. & van Herk, M., Jun 2002, In: *Medical Physics*. 29, 6

Inclusion of geometric uncertainties in treatment plan evaluation.

Van Herk, M., van Herk, M., Remeijer, P. & Lebesque, J. V., 1 Apr 2002, In: *International journal of radiation oncology, biology, physics*. 52, 5

Margins for geometric uncertainty around organs at risk in radiotherapy.

Van Herk, M., McKenzie, A., van Herk, M. & Mijnheer, B., Mar 2002, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 62, 3

Time trends in organ position and volume in patients receiving prostate three-dimensional conformal radiotherapy.

Van Herk, M., Mechalakos, J. G., Mageras, G. S., Zelefsky, M. J., Lyass, O., van Herk, M., Kooy, H. M., Leibel, S. A. & Ling, C. C., Mar 2002, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 62, 3

Irradiation of paranasal sinus tumors, a delineation and dose comparison study.

Van Herk, M., Rasch, C., Eisbruch, A., Remeijer, P., Bos, L., Hoogeman, M., van Herk, M. & Lebesque, J. V., 1 Jan 2002, In: *International journal of radiation oncology, biology, physics*. 52, 1

Field size reduction enables iso-NTCP escalation of tumor control probability for irradiation of lung tumors.

Van Herk, M., Engelsman, M., Remeijer, P., van Herk, M., Lebesque, J. V., Mijnheer, B. J. & Damen, E. M., 1 Dec 2001, In: *International journal of radiation oncology, biology, physics*. 51, 5

Accurate measurement of the dynamic response of a scanning electronic portal imaging device.

Van Herk, M., Ploeger, L. S., Smitsmans, M. H., Gilhuijs, K. G. & van Herk, M., Mar 2001, In: *Medical Physics*. 28, 3

Physical aspects of a real-time tumor-tracking system for gated radiotherapy.

Van Herk, M., Shirato, H., Shimizu, S., Kunieda, T., Kitamura, K., van Herk, M., Kagei, K., Nishioka, T., Hashimoto, S., Fujita, K., Aoyama, H., Tsuchiya, K., Kudo, K. & Miyasaka, K., 1 Nov 2000, In: *International journal of radiation oncology, biology, physics*. 48, 4

The width of margins in radiotherapy treatment plans.

Van Herk, M., McKenzie, A. L., van Herk, M. & Mijnheer, B., Nov 2000, In: *Physics in Medicine and Biology*. 45, 11

Target volumes in radiotherapy for high-grade malignant glioma of the brain.

Van Herk, M., Jansen, E. P., Dewit, L. G., van Herk, M. & Bartelink, H., Aug 2000, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 56, 2

The accuracy of image registration for the brain and the nasopharynx using external anatomical landmarks.

Van Herk, M., Peters, A. R., Muller, S. H., de Munck, J. C. & van Herk, M., Aug 2000, In: *Physics in Medicine and Biology*. 45, 8

The probability of correct target dosage: dose-population histograms for deriving treatment margins in radiotherapy.

Van Herk, M., van Herk, M., Remeijer, P., Rasch, C. & Lebesque, J. V., 1 Jul 2000, In: *International journal of radiation oncology, biology, physics*. 47, 4

Leaf position verification during dynamic beam delivery: a comparison of three applications using electronic portal imaging.

Van Herk, M., Partridge, M., Evans, P. M., van Herk, M., Ploeger, L. S., Budgell, G. J. & James, H. V., Jul 2000, In: *Medical Physics*. 27, 7

3-D portal image analysis in clinical practice: an evaluation of 2-D and 3-D analysis techniques as applied to 30 prostate cancer patients.

Van Herk, M., Remeijer, P., Geerlof, E., Ploeger, L., Gilhuijs, K., van Herk, M. & Lebesque, J. V., 15 Mar 2000, In: *International journal of radiation oncology, biology, physics*. 46, 5

Comparison of prostate cancer treatment in two institutions: a quality control study.

Van Herk, M., Rasch, C., Remeijer, P., Koper, P. C., Meijer, G. J., Stroom, J. C., van Herk, M. & Lebesque, J. V., 1 Nov 1999, In: International journal of radiation oncology, biology, physics. 45, 4

A general methodology for three-dimensional analysis of variation in target volume delineation.

Van Herk, M., Remeijer, P., Rasch, C., Lebesque, J. V. & van Herk, M., Jun 1999, In: Medical Physics. 26, 6

Quantification and predictors of prostate position variability in 50 patients evaluated with multiple CT scans during conformal radiotherapy.

Van Herk, M., Zelefsky, M. J., Crean, D., Mageras, G. S., Lyass, O., Happersett, L., Ling, C. C., Leibel, S. A., Fuks, Z., Bull, S., Kooy, H. M., van Herk, M. & Kutcher, G. J., Feb 1999, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 50, 2

Computerized design of target margins for treatment uncertainties in conformal radiotherapy.

Van Herk, M., Mageras, G. S., Fuks, Z., Leibel, S. A., Ling, C. C., Zelefsky, M. J., Kooy, H. M., van Herk, M. & Kutcher, G. J., 15 Jan 1999, In: International journal of radiation oncology, biology, physics. 43, 2

Definition of the prostate in CT and MRI: a multi-observer study.

Van Herk, M., Rasch, C., Barillot, I., Remeijer, P., Touw, A., van Herk, M. & Lebesque, J. V., 1 Jan 1999, In: International journal of radiation oncology, biology, physics. 43, 1

Automatic registration of pelvic computed tomography data and magnetic resonance scans including a full circle method for quantitative accuracy evaluation.

Van Herk, M., van Herk, M., de Munck, J. C., Lebesque, J. V., Muller, S., Rasch, C. & Touw, A., Oct 1998, In: Medical Physics. 25, 10

Automatic three-dimensional matching of CT-SPECT and CT-CT to localize lung damage after radiotherapy.

Van Herk, M., Kwa, S. L., Theuws, J. C., van Herk, M., Damen, E. M., Boersma, L. J., Baas, P., Muller, S. H. & Lebesque, J. V., Jun 1998, In: Journal of nuclear medicine : official publication, Society of Nuclear Medicine. 39, 6

First clinical tests using a liquid-filled electronic portal imaging device and a convolution model for the verification of the midplane dose.

Van Herk, M., Boellaard, R., van Herk, M., Uiterwaal, H. & Mijnheer, B., Jun 1998, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 47, 3

New method to obtain the midplane dose using portal in vivo dosimetry.

Van Herk, M., Boellaard, R., Essers, M., van Herk, M. & Mijnheer, B. J., 1 May 1998, In: International journal of radiation oncology, biology, physics. 41, 2

Registration of MR and SPECT without using external fiducial markers.

Van Herk, M., de Munck, J. C., Verster, F. C., Dubois, E. A., Habraken, J. B., Boltjes, B., Claus, J. J. & van Herk, M., May 1998, In: Physics in Medicine and Biology. 43, 5

The potential impact of CT-MRI matching on tumor volume delineation in advanced head and neck cancer.

Van Herk, M., Rasch, C., Keus, R., Pameijer, F. A., Koops, W., de Ru, V., Muller, S., Touw, A., Bartelink, H., van Herk, M. & Lebesque, J. V., 1 Nov 1997, In: International journal of radiation oncology, biology, physics. 39, 4

Two-dimensional exit dosimetry using a liquid-filled electronic portal imaging device and a convolution model.

Van Herk, M., Boellaard, R., van Herk, M., Uiterwaal, H. & Mijnheer, B., Aug 1997, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 44, 2

Demonstration of a reduction in muscarinic receptor binding in early Alzheimer's disease using iodine-123 dextetimide single-photon emission tomography.

Van Herk, M., Claus, J. J., Dubois, E. A., Booij, J., Habraken, J., de Munck, J. C., van Herk, M., Verbeeten, B. & van Royen, E. A., Jun 1997, In: European Journal of Nuclear Medicine. 24, 6

A convolution model to convert transmission dose images to exit dose distributions.

Van Herk, M., Boellaard, R., van Herk, M. & Mijnheer, B. J., Feb 1997, In: *Medical Physics*. 24, 2

Effect of image artifacts, organ motion, and poor segmentation on the reliability and accuracy of three-dimensional chamfer matching.

Van Herk, M., van Herk, M., Gilhuijs, K. G., de Munck, J. & Touw, A., 1997, In: *Computer aided surgery : official journal of the International Society for Computer Aided Surgery*. 2, 6

Target margins for random geometrical treatment uncertainties in conformal radiotherapy.

Van Herk, M., Bel, A., van Herk, M. & Lebesque, J. V., Sept 1996, In: *Medical Physics*. 23, 9

The dose response relationship of a liquid-filled electronic portal imaging device.

Van Herk, M., Boellaard, R., van Herk, M. & Mijnheer, B. J., Sept 1996, In: *Medical Physics*. 23, 9

Interactive three dimensional inspection of patient setup in radiation therapy using digital portal images and computed tomography data.

Van Herk, M., Gilhuijs, K. G., Drukker, K., Touw, A., van de Ven, P. J. & van Herk, M., 1 Mar 1996, In: *International journal of radiation oncology, biology, physics*. 34, 4

Transmission dosimetry with a liquid-filled electronic portal imaging device.

Van Herk, M., Essers, M., Boellaard, R., van Herk, M., Lanson, H. & Mijnheer, B., 1 Mar 1996, In: *International journal of radiation oncology, biology, physics*. 34, 4

Automatic three-dimensional inspection of patient setup in radiation therapy using portal images, simulator images, and computed tomography data.

Van Herk, M., Gilhuijs, K. G., van de Ven, P. J. & van Herk, M., Mar 1996, In: *Medical Physics*. 23, 3

Dosimetric characteristics of a liquid-filled electronic portal imaging device.

Van Herk, M., Essers, M., Hoogervorst, B. R., van Herk, M., Lanson, H. & Mijnheer, B. J., 1 Dec 1995, In: *International journal of radiation oncology, biology, physics*. 33, 5

Quantification of organ motion during conformal radiotherapy of the prostate by three dimensional image registration.

Van Herk, M., van Herk, M., Bruce, A., Kroes, A. P., Shouman, T., Touw, A. & Lebesque, J. V., 1 Dec 1995, In: *International journal of radiation oncology, biology, physics*. 33, 5

Variation in volumes, dose-volume histograms, and estimated normal tissue complication probabilities of rectum and bladder during conformal radiotherapy of T3 prostate cancer.

Van Herk, M., Lebesque, J. V., Bruce, A. M., Kroes, A. P., Touw, A., Shouman, R. T. & van Herk, M., 1 Dec 1995, In: *International journal of radiation oncology, biology, physics*. 33, 5

Electronic portal imaging.

Van Herk, M., van Herk, M., Bel, A., Gilhuijs, K. G., Lebesque, J. V., van Dalen, A., van der Ven, P. & Vijlbrief, R., Dec 1995, In: *Bulletin du cancer*. 82 Suppl 5

Magnetic resonance image-directed stereotactic neurosurgery: use of image fusion with computerized tomography to enhance spatial accuracy.

Van Herk, M., Alexander, E., Kooy, H. M., van Herk, M., Schwartz, M., Barnes, P. D., Tarbell, N., Mulkern, R. V., Holupka, E. J. & Loeffler, J. S., Aug 1995, In: *Journal of neurosurgery*. 83, 2

Optimization of automatic portal image analysis.

Van Herk, M., Gilhuijs, K. G., Touw, A., van Herk, M. & Vijlbrief, R. E., Jul 1995, In: *Medical Physics*. 22, 7

Automatic three-dimensional correlation of CT-CT, CT-MRI, and CT-SPECT using chamfer matching.
Van Herk, M., van Herk, M. & Kooy, H. M., Jul 1994, In: *Medical Physics*. 21, 7

Image fusion for stereotactic radiotherapy and radiosurgery treatment planning.

Van Herk, M., Kooy, H. M., van Herk, M., Barnes, P. D., Alexander, E., Dunbar, S. F., Tarbell, N. J., Mulkern, R. V., Holupka, E. J. & Loeffler, J. S., 30 Mar 1994, In: *International journal of radiation oncology, biology, physics*. 28, 5

A comprehensive system for the analysis of portal images.

Van Herk, M., van Herk, M., Bel, A., Gilhuijs, K. G. & Vijlbrief, R. E., Nov 1993, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 29, 2

An algorithm for automatic analysis of portal images: clinical evaluation for prostate treatments.

Van Herk, M., Gilhuijs, K. G., el-Gayed, A. A., van Herk, M. & Vijlbrief, R. E., Nov 1993, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 29, 2

A verification procedure to improve patient set-up accuracy using portal images.

Van Herk, M., Bel, A., van Herk, M., Bartelink, H. & Lebesque, J. V., Nov 1993, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 29, 2

Verification of lung attenuator positioning before total body irradiation using an electronic portal imaging device.

Van Herk, M., Gladstone, D. J., van Herk, M. & Chin, L. M., 30 Sept 1993, In: *International journal of radiation oncology, biology, physics*. 27, 2

Automatic on-line inspection of patient setup in radiation therapy using digital portal images.

Van Herk, M., Gilhuijs, K. G. & van Herk, M., 1993, In: *Medical Physics*. 20, 3, p. 667-77

A fast algorithm for local minimum and maximum filters on rectangular and octagonal kernels

van Herk, M., Jul 1992, In: *Pattern Recognition Letters*. 13, 7, p. 517-521 5 p.

Automatic verification of radiation field shape using digital portal images.

Van Herk, M., Bijhold, J., Gilhuijs, K. G. & van Herk, M., 1992, In: *Medical Physics*. 19, 4, p. 1007-14

Sampling methods for a matrix ionization chamber system.

Van Herk, M., van Herk, M., Bijhold, J., Hoogervorst, B. & Meertens, H., 1992, In: *Medical Physics*. 19, 2, p. 409-18

Fast evaluation of patient set-up during radiotherapy by aligning features in portal and simulator images.

Van Herk, M., Bijhold, J., van Herk, M., Vijlbrief, R. & Lebesque, J. V., Dec 1991, In: *Physics in Medicine and Biology*. 36, 12

Radiation field edge detection in portal images.

Van Herk, M., Bijhold, J., Gilhuijs, K. G., van Herk, M. & Meertens, H., Dec 1991, In: *Physics in Medicine and Biology*. 36, 12

Physical aspects of a liquid-filled ionization chamber with pulsed polarizing voltage.

Van Herk, M. & van Herk, M., 1991, In: *Medical Physics*. 18, 4

First clinical experience with a newly developed electronic portal imaging device.

Van Herk, M., Meertens, H., van Herk, M., Bijhold, J. & Bartelink, H., May 1990, In: *International journal of radiation oncology, biology, physics*. 18, 5

An inverse filter for digital restoration of portal images.

Van Herk, M., Meertens, H., van Herk, M. & Weeda, J., Jun 1988, In: *Physics in Medicine and Biology*. 33, 6

A matrix ionisation chamber imaging device for on-line patient setup verification during radiotherapy.

Van Herk, M., van Herk, M. & Meertens, H., Apr 1988, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 11, 4

A liquid ionisation detector for digital radiography of therapeutic megavoltage photon beams.

Van Herk, M., Meertens, H., van Herk, M. & Weeda, J., Apr 1985, In: Physics in Medicine and Biology. 30, 4

Activities

Beyond Quantec

Van Herk, M. (Chair)

24 Feb 2020 → 25 Feb 2020

AERO Academy Conference

Van Herk, M. (Chair)

7 Feb 2020 → 8 Feb 2020

Data mining for adaptive radiotherapy

Van Herk, M. (Invited speaker)

17 Jan 2020

4D Treatment Workshop for Particle Therapy 2019

Van Herk, M. (Chair)

23 Nov 2019

George Edelstyn Lecture

Van Herk, M. (Speaker)

4 Oct 2019

Advanced Treatment Planning

Van Herk, M. (Member of programme committee)

22 Sept 2019 → 26 Sept 2019

Radiotherapy / Modelling and theranostics

Van Herk, M. (Speaker)

29 Aug 2019

The 4th Christie Advanced Radiotherapy Summer School

Van Herk, M. (Chair)

3 Jul 2019

Highlight talk: Restoring a Data General Nova computer used in the first CT scanner

Van Herk, M. (Speaker)

18 Jun 2019

Comparing two web platforms for uncertainty simulation of external beam radiotherapy

Van Herk, M. (Speaker)

17 Jun 2019

Dose Calculation and Optimisation

Van Herk, M. (Speaker)

13 Jun 2019

Tools & technologies for adaptive radiotherapy

Van Herk, M. (Speaker)

12 Jun 2019

Debate: This house believes that margin reduction is the key to improved outcome. For the motion

Van Herk, M. (Speaker)

28 Apr 2019

Cutting Edges and Challenges: Data Sharing: Needs, Opportunities and Issues.

Van Herk, M. (Invited speaker)

27 Mar 2019

Predicting Tumour Control and Survival: Upcoming Results on Treatment Failure and Survival

Van Herk, M. (Invited speaker)

26 Mar 2019

IGRT for CNS and Head and Neck

Van Herk, M. (Speaker)

20 Feb 2019

Uncertainties in image registration and contour propagation

Van Herk, M. (Speaker)

20 Feb 2019

Technology: Planar imaging, MV and kV

Van Herk, M. (Speaker)

18 Feb 2019

Learning from every SBRT patient treated

Van Herk, M. (Invited speaker)

5 Oct 2018

Adaptive planning strategies - Robust & probabilistic planning - Rigid and non-rigid multimodality image registration

Van Herk, M. (Invited speaker)

25 Sept 2018

Adaptive Radiotherapy

Van Herk, M. (Invited speaker)

4 Jul 2018

Adaptive Radiotherapy: Adaptive RT Developments

Van Herk, M. (Invited speaker)

Jul 2018

Radiation Oncology Physics and Systems: Learning from every patient treated

Van Herk, M. (Keynote speaker)

Jun 2018

ESTRO 23, October 2004

Van Herk, M. (Participant)

Oct 2004

Prizes

Breur Award

Van Herk, M. (Recipient), 2004

Impact Award

Van Herk, M. (Recipient), 19 Jun 2018

Netherlands Cancer Institute awards

Van Herk, M. (Recipient), 2015

Awards

Projects

15HLTO8 Consortium - EURAMET - EMPIR

Van Herk, M. (PI) & Kirkby, K. (Col)

1/06/16 → 31/05/19

Advanced Radiotherapies Technologies Network (ART-NET)

Faivre-Finn, C. (PI), Illidge, T. (Col), Kirkby, K. (Col) & Van Herk, M. (Col)

1/09/16 → 31/08/21

A Tool for Predicting an Individual Prostate Cancer Patient's Risk of Metastasis and Need for Lymph Node Irradiation.

Choudhury, A. (PI), Kirkby, N. (Col), Mcwilliam, A. (Col), Van Herk, M. (Col) & West, C. (Col)

1/03/17 → 28/06/20

MANchester RESearch Transforming Radiation Oncology (MAESTRO) Programme as Part of CRUK RadNet.

Bristow, R. (PI), Burnet, N. (Col), Choudhury, A. (Col), Dive, C. (Col), Faivre-Finn, C. (Col), Hagan, I. (Col), Hoskin, P. (Col), Hussell, T. (Col), Illidge, T. (Col), Kirkby, K. (Col), Kostarelos, K. (Col), O'Connor, J. (Col), Peek, N. (Col), Rattray, M. (Col), Taylor, S. (Col), Thornton, D. (Col), Van Herk, M. (Col), West, C. (Col), Whetton, A. (Col), Williams, K. (Col) & Yorke, J. (Col)

1/11/19 → 31/10/24

NIHR Biomedical Research Centre: Cancer Advanced Radiotherapy Theme.

West, C. (PI), Bristow, R. (Col), Bruce, I. (Col), Burnet, N. (Col), Choudhury, A. (Col), Evans, D. (Col), Faivre-Finn, C. (Col), Hoskin, P. (Col), Illidge, T. (Col), Kirkby, K. (Col), Kirkby, N. (Col), O'Connor, J. (Col) & Van Herk, M. (Col)

1/04/17 → 31/03/19

NIHR Manchester Biomedical Research Centre

Bruce, I. (PI), Lord, G. (Col), Lennon, R. (Col), Black, G. (Col), Wedge, D. (Col), Morris, A. (Col), Hussell, T. (Col), Sharrocks, A. (Col), Stivaros, S. (Col), Buch, M. (Col), Gough, J. (Col), Kostarelos, K. (Col), Thistlethwaite, F. (Col), Kadler, K. (Col), Barton, A. (Col), Hyrich, K. (Col), Mcbeth, J. (Col), O'Neill, T. (Col), Vestbo, J. (Col), Simpson, A. (Col), Singh, S. (Col), Smith, J. (Col), Felton, T. (Col), Murray, C. (Col), Griffiths, C. (Col), Cullum, N. (Col), Rhodes, L. (Col), Warren, R. (Col), Paus, R. (Col), Dumville, J. (Col), Viros Usandizaga, A. (Col), Keavney, B. (Col), Tomaszewski, M. (Col), Allan, S. (Col), Body, R. (Col), Cartwright, E. (Col), Heagerty, A. (Col), Kalra, P. (Col), Miller, C. (Col), Rutter, M. (Col), Smith, C. (Col), Trafford, A. (Col), Evans, D. (Col), Crosbie, E. (Col), Crosbie, P. (Col), Harvie, M. (Col), Howell, S. (Col), Renehan, A. (Col), Dive, C. (Col), Blackhall, F. (Col), Landers, D. (Col), Krebs, M. (Col), Cook, N. (Col), Clarke, R. (Col), Taylor, S. (Col), Jorgensen, C. (Col), Lorigan, P. (Col), Jayson, G. (Col), Valle, J. (Col), McCabe, M. (Col), Armstrong, A. (Col), Freitas, A. (Col), Illidge, T. (Col), Choudhury, A. (Col), Hoskin, P. (Col), West, C. (Col), Van Herk, M. (Col), Faivre-Finn, C. (Col), Bristow, R. (Col), Kirkby, K. (Col), Birtle, A. (Col), Mackay, R. (Col), Radford, J. (Col), Linton, K. (Col), Higham, C. (Col), Munro, K. (Col), Plack, C. (Col), Arden Armitage, C. (Col), Bruce, I. (Col), Moore, D. (Col), Saunders, G. (Col), Stone, M. (Col), Haddock, G. (Col), Lewis, S. (Col), Elliott, R. (Col), Green, J. (Col), Lovell, K. (Col), Morrison, A. (Col), Shaw, J. (Col), Bucci, S. (Col), Ainsworth, J. (Col), Webb, R. (Col), Newman, W. (Col), Banka, S. (Col), Clayton-Smith, J. (Col), Payne, K. (Col), Moldovan, R. (Col), Wynn, R. (Col) & Jones, S. (Col)

1/12/22 → 30/11/27

Datasets