PROGRAM OF THE XVIth ICCR

Sunday, May 30, 2010

Reception & Registration

6:30 pm - 9:00 pm

-Room: ZHW

6:30 pm **Registration desk open**
7:00 pm **Welcome Reception**

Monday, May 31, 2010

Registration

8:00 am - 9:00 am

-Room: ZHW

Welcome

8:55 am - 9:00 am

-Room 1: ZHW

Special Lecture

9:00 am - 10:00 am

History and Future of Computing

-Room 1: ZHW

Chair: Di Yan / Jake van Dyk

9:00 am **History of Computing** - M. van Herk*
9:30 am **Quantum Computing** - H Buhrman*

Scientific Sessions

10:00 am - 11:00 am

Adaptive RT

-Room 1: ZHW

Chair: Di Yan / Jake van Dyk

10:00 am **A Novel Online Adaptive Strategy for Cervical Cancer Patients: Library of Plans Generated From Pre-Treatment Variable Bladder Filling CT-Scans** - L. Bondar*, M. Hoogeman, J. Mens, G. Dhawtal, S. Quint , R. Ahmad, I. de Pree, B. Heijmen

10:18 am **Adaptive Replanning for IMRT of Cervix Cancer Based On Dosimetric and Volumetric Analysis of Treatment Progress** - J. Stewart*, K. Lim, V. Kelly, J. Xie, K. Brock, J. Moseley, Y. Cho, A. Fyles, A. Lundin, H. Rehbinder, J. Löf, M. Milosevic, D. Jaffray

10:30 am **Dose-To-Date Calculation for Adaptive Therapy** - D. McShan*, D. Litzenberg, M. Kessler, B. Fraass

10:42 am **Adaptive Radiotherapy for H&N Cancer Based On An Average Anatomy Measured with Deformable Registration** - S. van Kranen*, C. Kamerling, M. van Herk, J.-J. Sonke

10:54 am **Computer Assisted Analysis of Lung Tumor Regression During Radiotherapy** - S. Rit*, H. Kuijf, S. van Kranen, M. van Herk, J.-J. Sonke

Coffee/Refreshments

11:06 am - 11:30 am

-Room: ZHW

Scientific Sessions

11:30 am - 1:00 pm

Hard-core Planning

-Room 1: ZHW

Chair: Michael Sharpe / Andre Dekker

11:30 am **VMAT with An Arbitrary Trajectory** - J. Bedford*, A. Warrington

11:48 am **Optimized Trajectory for Volumetric Modulated Arc Therapy of CNS Tumors** - Y. Yang, P. Zhang*, L. Happersett, M. Chan, G. Mageras, M. Hunt

12:00 pm **The Use of the Elekta Beam Modulator MLC During VMAT IMRT Delivery Confers Advantage - a Study of "parked gaps" and delivered fluence**- S. Webb*

12:12 pm **A Geometry-Driven Approach for Predicating DVHs of Organs at Risk in IMRT Planning** - B. Wu*, M. Kazhdan, P. Simari, r. Taylor, T. Mcnutt

12:24 pm **Prioritized Prescription IMRT Optimization: A Comparison with Pinnacle Planning Results** - V. Clark*, Y. Chen, A. Apte, J. Michalski, J. Deasy

12:36 pm **Directly Deliverable Multi-Criteria Optimization for Step and Shoot IMRT** - D. Craft*

12:48 pm **Clustering Analysis of Geometric Data for Beam Ensemble Selection in Radiation Therapy** - M. Bangert*, U. Oelfke

Segmentation

-Room 2: MG

Chair: Marc Kessler / Johan Cuijpers

11:30 am **Texture-Based Segmentation of Glioblastoma Multiforme Tumors in MR Images** - D. Haile, I. Yeung, H. Keller*

11:48 am **Development of An Atlas to Aid in MRI-Guided Treatment Planning: Initial Estimation of Requirements** - E. Kerkhof, S. Ramani, M. Kessler, A. Antonuk, D. McShan, J. Balter*

12:00 pm **Atlas Based Prostate Segmentation in the Clinic** - A. Kotte*, R. Langerak, M. van Vulpen, J. Pluim, U. van der Heide

12:12 pm **Semi-Automatic Segmentation of Prostate in CT-Scan Images Using Region-Based Active Contours** - l. yavari*, H. Soltanian-Zadeh, A. Kamali-Asl

12:24 pm **Automatic Detection System for Multiple Region of Interest Registration to Account for Posture Changes in Head and Neck Radiotherapy** - A. Mencarelli*, S. van Beek, L. Zijp, C. Rasch, M. van Herk, J.-J. Sonke

12:36 pm **A Voxel Based Finite Element Model for the Prediction of Bladder Deformation** - X. Chai*, M. van Herk, J. van de Kamer, M. Hulshof, P. Remeijer, A. Bel

12:48 pm **Multi-Organ Deformable Finite Element Model of Pancreatic Respiratory Motion** - T. Nguyen*, J. Moseley, L. Dawson, K. Brock

Lunch

1:00 pm - 2:00 pm

-Room: ZHW

Scientific Sessions

2:00 pm - 3:30 pm

IGRT Devices

-Room 1: ZHW

Chair: Rock Mackie / Jan Lagendijk

2:00 pm **MRI Guided Radiotherapy: Status Report and Clinical Plans for a Radiotherapy Accelerator with Integrated 1.5 T MRI Functionality** - B. Raaymakers*, J. Lagendijk, M. van Vulpen, I. Jürgenliemk-Schulz, O. Reerink, J. Battermann, A. Raaijmakers, E. Kerkhof, S. Crijns, M. Stam, K. Smit, F. Benedosso, J. Kok, B. van Asselen, J. Overweg, K. Brown, J. Allen

2:18 pm **Beam Characterization for a MRI-Radiotherapy System: Measurements and Monte Carlo Simulations** - K. Smit*, A. Raaijmakers, J. Kok, B. Raaymakers, J. Lagendijk

2:30 pm **T1 Estimation From SPGR MRI Using Total Variation Spatial Regularization** - h. wang, y. cao*

2:42 pm **A Second Generation Small Animal Radiation Research Platform (SARRP)** - J. Wong*, P. Kazanzides, I. Iordachita, M. Matinfar, M. Armour, R. Jacques, E. Ford, E. Tryggestad, T. Mcnutt, J.-J. Sonke

2:54 pm **Validation of 3D Surface Imaging for Image Guidance in Deep Inspiration Breath Hold Radiation Therapy for Left-Sided Breast Cancer** - T. Alderliesten*, J.-J. Sonke, C. van Vliet, P. Remeijer

3:06 pm **Volumetric Ultrasound Guided Online Adaptive Partial Breast Irradiation** - X. Gu*, T. Nelson, C. Men, X. Jia, Y. Liang, S. Jiang

3:18 pm **Collimator Design for Fan-Beam Proton Therapy** - P. Hill*, T. Mackie

Monte Carlo

-Room 2: MG

Chair: Indrin Chetty / Frank Verhaegen

2:00 pm **Iterative Optimization for Intensity Modulated Arc Therapy Using Monte Carlo Dose Calculations** - D. Hoover*, M. Jensen, L. Wong, J. Craig, J. Chen, E. Wong

2:18 pm **Monte Carlo-Based Dose Calculation for Stereotactic Body Radiotherapy (SBRT) of Lung Cancer: Dosimetric Consequences and Analysis of Patterns of Failure** - s. Kumar*, D. Liu, N. Wen, B. Movsas, M. Ajlouni, I. Chetty

2:30 pm **Distributed Computing Solution for Automated Treatment Verification** - P. Downes*, A. Millin, E. Spezi, G. Lewis, G. Yaikhom, J. Giddy, D. Walker

2:42 pm **Treatment Planning for Synchrotron Stereotactic Radiotherapy Clinical Trials: Parallelized Monte Carlo Dose Computation and Validation in a Water Phantom** - M. Vautrin*, M. Benkebil, Y. Prezado, I. Martínez-Rovira, H. Elleaume, F. Estève, J. Adam

2:54 pm **Proton SOBP Reconstruction for Low-Density Media and Divergent Beams** - A. Guemnie Tafo*, E. Fourkal, I. Veltchev, C. Ma

3:06 pm **A Single Variable Monte Carlo Proton Dose Calculation** - B. Clasie, H. Kooy*, K. Zhang

3:18 pm **DPM Monte Carlo with Multi-Source Model: Validation and Benchmark Results** - S. Davidson*, S. Kry, J. Cui, J. Deasy, G. Ibbott, M. Vicic, A. White, D. Followill

Coffee/Refreshments

3:30 pm - 4:00 pm

-Room: ZHW

Scientific Sessions

4:00 pm - 5:30 pm

Fast Planning

-Room 1: ZHW

Chair: Hanne Kooy / Arjan Bell

4:00 pm **A Fast and Accurate Automated Method for Online Re-Planning in Adaptive Radiotherapy** - S. Breedveld*, P. Storchi, L. Bondar, E. Vasquez Osorio, M. Hoogeman, B. Heijmen

4:18 pm **Fluence Map Convolution with Heterogeneity Correction for IMRT Dose Calculation** - W. Lu*, M. Chen, Q. Chen

4:30 pm **Interactive IMRT Planning with Spatially Non-Uniform and Adjustable Prescription** - P. Lougovski*, J. LeNoach, L. Zhu, Y. Ma, Y. Censor, L. Xing

4:42 pm **Dynamic Delivery Techniques of TomoTherapy and Measurements** - Y. Chen*, W. Lu, M. Chen, Q. Chen, D. Lucas, E. Schnarr, G. Reitz, K. Ruchala, G. Olivera

4:54 pm **Application of 3D Intensity Modulated Brachytherapy for Accelerated Partial Breast Irradiation** - B. Guo*, C. Shi, C. Esquivel, T. Eng, N. Papanikolaou

5:06 pm **The Memetic Algorithm: Population-Based Metaheuristic Approximation for CyberKnife Dosimetric Optimization** - M. Witten, O. Clancey*

5:18 pm **GPU Accelerated Real Time KV/MV Dose Computation** - R. Jacques*, D. Smith, E. Tryggestad, J. Wong, r. TAYLOR, T. Mcnutt

Biology et al.

-Room 2: MG

Chair: Wolfgang Tome / Maarten Dirkx

4:00 pm **Isotoxic Dose Escalation by Increasing Tumor Dose Variance** - M. Steneker*, A. Trofimov, T. Hong, M. Engelsman

4:18 pm **Modelling of the Biological Effect of Hyperthermia During Radiotherapy Planning: Concept and Consequences** - A. Bel*, H. Kok, N. Franken, J. Crezee

4:30 pm **Plan Optimization with Direct Use of Functional Image Data** - R. Ten Haken*, D. McShan

4:42 pm **Functional Programming Constructs Applied to RT** - T. Madden*, H. Kooy

4:54 pm **A Modern IT Infrastructure for the Radiation Oncology Department at Maisonneuve-Rosemont Hospital** - R. Plourde*, P. Munger, W. Wierzbicki

5:06 pm **Impact Analysis of Image-Guided Radiation Therapy: Description of a Multi-Fraction Dose Propagation Model** - J. Van Dyk*, G. Bauman, C. Johnson, D. Turnbull, J. Kempe, J. Battista

5:18 pm **Modeling of Geometrical Uncertainties Due to Movements and Deformations** - E. Budiarto*, M. Keijzer, P. Storchi, M. Hoogeman, L. Bondar, T. Mutanga, H. de Boer, A. Heemink

Tuesday, June 01, 2010

Special Lecture

9:00 am - 9:30 am

Open Source Software

-Room 1: ZHW

Chair: Marcel van Herk / James McClelland

9:00 am **Open source medical device development** - N. Yong*

Scientific Sessions

9:30 am - 11:00 am

Image Registration

-Room 1: ZHW

Chair: Marcel van Herk / James McClelland

9:30 am **Validation of Constrained B-Spline Deformable Registration of Prostate MRI with and Without Endorectal Coil** - C. Kamerling*, S. van Kranen, M. Maas, F. Pos, H. Teertstra, S. Muller, J.-J. Sonke, M. van Herk

9:48 am **Development of Benchmark Models to Investigate Displacement Errors in Deformable Image Registration** - H. Zhong*, J. Kim, I. Chetty

10:00 am **Image Registration Using Spatially Weighted Mutual Information with Extended Structures** - S. Park, J. Sohn*

10:12 am **Medical Image Registration with Robbins-Monro Algorithms** - M. Schroeter*, O. Sauer

10:24 am **Automatic Motion Mask Extraction for Deformable Registration of the Lungs** - J. Vandemeulebroucke*, O. Bernard, J. Kybic, P. Clarysse, D. Sarrut

10:36 am **Analysis of Deformations Between In-Vivo and Ex-Vivo Tissue Around Invasive Breast Cancer** - W. Chen*, J. Stroom, A. Schmitz, J.-J. Sonke, K. Gilhuijs

10:48 am **3D Dose Addition of External Beam Radiotherapy and Brachytherapy for Oropharyngeal Patients Using Non-Rigid Registration** - E. Vasquez Osorio*, M. Hoogeman, D. Teguh, A. Al-Mamgani, I. Kolkman-Deurloo, L. Bondar, P. Levendag, B. Heijmen

Coffee/Refreshments

11:00 am - 11:30 am

-Room: ZHW

Scientific Sessions

11:30 am - 1:00 pm

4D CT

-Room 1: ZHW

Chair: Daniel Low / Catherin Coolens

11:30 am **Utilization of 4D-CT and Contrast Enhanced Expiration Breath-Hold CT for 3D Treatment Planning of Lung Tumors** - J. Nijkamp*, S. Rit, M. van Herk, J.-J. Sonke

11:48 am **Reconstruction of a Mid-Position PET Scan for Treatment Planning in Radiotherapy** - M. Kruis*, M. van Herk

12:00 pm **PCA-Based Lung Motion Model** - R. Li*, J. Lewis, X. Jia, T. Zhao, J. Lamb, D. Yang, D. Low, S. Jiang

12:12 pm **Reconstruction of Predictive Patient-Specific Dynamic Models: Towards Virtual Patient Guided Radiation Therapy** - C. Shi*, B. Guo, J. Xu, W. He, X. Xu

12:24 pm **Data Mining Techniques Applied to 4DCT Image Sorting** - C. Gianoli*, M. Riboldi, e. preve, l. travaini, m. ferrari, f. cattani, d. alterio, r. orecchia, g. baroni

12:36 pm **Simulation of Long-Cine CT Based Internal Target Volume (ITV) Coverage of Lung Tumours at the End of Radical Radiotherapy with and Without Gated Delivery** - S. Hughes*, J. McClelland, Y. Suh, A. Qureshi, S. Ahmad, D. Hawkes, D. Landau

12:48 pm **Study of Inter-Fraction Variations in Respiratory Motion Using Deformable Registration Based Motion Models** - J. McClelland*, S. Hughes, M. Modat, S. Ahmad, D. Landau, S. Ourselin, D. Hawkes

Computing Infrastructure

-Room 2: MG

Chair: Joseph Deasey / Simeon Nill

11:30 am **Technical Infrastructure for Large-Scale 2D Portal Dosimetry** - S. Nijsten*, L. Persoon, W. van Elmpt, F. Verhaegen

11:48 am **IHE-RO: Interoperable Data Standards for Radiation Oncology** - W. Bosch*, B. Curran, S. Swerdloff

12:00 pm **IHE-RO: Use Cases From Conception to the Clinic** - C. Field*, C. Able, N. Linton

12:12 pm **Recent Improvements to CERR: A Computational Environment for Radiotherapy Research** - A. Apte*, D. Khullar, I. El Naqa, J. Deasy

12:24 pm **Application of Open Source Server as DICOM Glue in a Radiotherapy Department** - M. van Herk*, L. Zijp, P. Remeijer

12:36 pm **Plastimatch – An Open Source Software Suite for Radiotherapy Image Processing** - G. Sharp*, R. LI, J. Wolfgang, G. Chen, M. Peroni, M. Spadea, S. Mori, J. Zhang, J. Shackleford, N. Kandasamy

12:48 pm **Initiation of Open Source Medical Devices (OSMD) with the Development and Design of Small Animal Imaging and Therapy System** - S. Prajapati, T. Mackie*, R. Jeraj, M. Rodriguez

Day Trip

2:30 pm - 9:00 pm

Wednesday, June 02, 2010

Special Lecture

9:00 am - 10:00 am

Clinical Trial Databases

Chair: Andrew Hope / James Balter

-Room 1: ZHW

9:00 am **caBIG for Medical Collaboration** - J. Beliën*

9:30 am **The Sky is the Limit: Bringing Terabytes of Astronomy Data Online with the SDSS SkyServer** - A. Thakar*

Scientific Sessions

10:00 am - 11:00 am

Data Mining - Clinical

-Room 1: ZHW

Chair: Andrew Hope / James Balter

10:00 am **Data Mining: The Impact of Subclinical Disease On Prostate Radiotherapy Outcome** - M. Witte*, W. Heemsbergen, A. Al-Mamgani, F. Pos, M. van Herk

10:18 am **Significance Testing in Dose Difference Maps** - C. Chen*, M. Witte, W. Heemsbergen, M. van Herk

10:30 am **OncoSpace: A New Paradigm for Clincial Research and Decision Support in Radiation Oncology** - T. Mcnutt*, J. Wong, J. Purdy, R. Valicenti, T. DeWeese

10:42 am **Survival Prediction with Bayesian Networks in More Than 6000 Non-Small Cell Lung Cancer Patients** - A. Dekker*, A. Hope, P. Lambin, P. Lindsay

10:54 am **Using a Parameterized Representation of the 3D Dose Distribution to Predict Radiation-Induced Toxicities** - F. Buettner*, S. Gulliford, S. Webb, M. Partridge

Coffee/Refreshments

11:06 am - 11:30 am

-Room: ZHW

Scientific Sessions

11:30 am - 1:00 pm

Tracking

-Room 1: ZHW

Chair: Steve Webb / Gregory Sharp

11:30 am **On-Line Dose Compensation for Ion Beam Tracking of Moving Targets** - R. Lüchtenborg*, N. Saito, N. Chaudhri, M. Durante, E. Rietzel, C. Bert

11:48 am **Beam Tracking with Scanned Carbon Ions** - C. Bert*, A. Gemmel, N. Saito, N. Chaudhri, D. Schardt, G. Kraft, M. Durante, E. Rietzel

12:00 pm **Simulation of Scanned Proton Beam Delivery to Moving Targets** - K. Kraus*, E. Heath, U. Oelfke

12:12 pm **Prediction of Position Estimation Errors for 3D Target Trajectories Estimated From Cone-Beam CT Projections** - P. Poulsen*, B. Cho, P. Keall

12:24 pm **A Failure Detection Strategy for Intrafraction Prostate Motion Monitoring with On-Board Imagers** - W. Liu*, G. Luxton, L. Xing

12:36 pm **Fast and Robust Tracking of Multiple Implanted Fiducial Markers in Fluoroscopy** - R. LI*, G. Sharp

12:48 pm **A Frameless Stereotactic Radiosurgery System Based On Real-Time 6D Position Monitoring and Adaptive Head Motion Compensation** - R. Wiersma*, Z. Wen, K. Yenice

Data Mining - Infrastructure

-Room 2: MG

Chair: Todd McNutt

11:30 am **Radiation Oncology Data Alliance: A Scalable Framework for a Modality-Wide Database Suitable for Comparative Effectiveness Research** - S. Hopkins*, L. Oakes, S. Upasani, J. Goldwein

11:48 am **Development of a MAASTRO Public Prediction Website to Disseminate Knowledge and Facilitate Use of Prediction Models in Daily Clinical Practice** - C. Oberije*, L. Ruijs, R. Stiphout, E. Roelofs, D. De Ruysscher, A. Dekker, P. Lambin

12:00 pm **Advantages of a Data Warehouse for Radiotherapy Research** - L. Persoon*, S. Nijsten, P. Lambin, A. Dekker

12:12 pm **Development of a Comprehensive Outcomes Quality Assurance (OQA) Data Bank for Radiation Oncology** - D. Mullin*, A. Apte, D. Khullar, J. Deasy

12:24 pm **Tools for Extracting and Analyzing Dose-Volume-Outcomes Relationships: Improvements to the Dose Response ExplorEr System (DREES)** - J. Oh*, A. Apte, I. El Naqa, J. Deasy

12:36 pm **Radiotherapy and Clinical Database Integration for Lung Cancer Outcomes Research** - A. Hope*, A. Dekker, M. Sharpe, P. Lindsay

12:48 pm **Human-Computer Interaction in Radiotherapy Target Volume Delineation: A Prospective, Multi-Institutional Comparison of Mouse and Graphical Tablet User Input Devices** - C. Fuller*, C. Rasch, J. Duppen, N. Papanikolaou, R. Steenbakkers, C. Thomas, S. Wang, M. Fuss

Lunch

1:00 pm - 2:00 pm

-Room: ZHW

Scientific Sessions

2:00 pm - 3:30 pm

Cone Beam CT

-Room 1: ZHW

Chair: David Jaffray / Lei Xing

2:00 pm **Fast GPU-Based Low-Dose Cone Beam CT Reconstruction Via Total Variation Regularization** - X. Jia*, Y. Lou, R. Li, X. Gu, C. Men, S. Jiang

2:18 pm **Enhancement of 4D Cone-Beam Computed Tomography Through Constraint Optimization** - T. Solberg*, J. Wang, X. Zhang, W. Mao, L. Xing

2:30 pm **Compressed Sensing with A First-Order Method for Low-Dose Cone-Beam CT Reconstruction** - K. Choi*, J. Wang, L. Zhu, T. Suh, S. Boyd, L. Xing

2:42 pm **Characterization of Ghosting in Cone Beam CT** - L. Ploeger*, J.-J. Sonke, M. van Herk

2:54 pm **Tomographic Image From An X-Ray Projection Image of a Different Angle with a Priori Computed Tomography** - B. Yi*, J. Zhang, C. Yu

3:06 pm **A One Stop Shop CBCT Guided Procedure for Emergency Radiation Therapy of Spinal Bone Metastases** - C. Panneman*, R. Haas, M. Wolfrat, A. Betgen, D. Minkema, S. Ali, J.-J. Sonke, M. van Herk, P. Remeijer

3:18 pm **Dosimetric Impact of Angluar Deviations in Positioning for Spinal Radiosurgery** - J. Kim*, J. Jin, H. Zhong, . Patel, B. Movsas, J. Rock, I. Chetty, S. Ryu

Robust Planning

-Room 2: MG

Chair: Uwe Oelfke / Marnix Witte

2:00 pm **Inverse Planning for Four-Dimensional Volumetric Modulated ARC Therapy** - Y. Ma*, T. Suh, L. Xing

2:18 pm **The Continuum of 3D to 4D Treatment Delivery** - O. Nohadani*, T. Bortfeld

2:30 pm **A Framework for Estimating the Effect of Motion Irregularities by 4D Delivery Simulation** - D. McQuaid*, T. Bortfeld

2:42 pm **Scanned Proton Radiotherapy for Mobile Targets - Which Plan Characteristics Require Rescanning, Which Maybe Not?** - A. Knopf*, E. Hug, T. Lomax

2:54 pm **Is It Necessary to Define Safety Margins for Intensity Modulated Proton Therapy Plans?** - F. Albertini*, E. Hug, T. Lomax

3:06 pm **Towards a Probabilistic Approach for PTV Definition in Hadron Therapy** - G. Cabal*, O. Jäkel

3:18 pm **Probabilistic Planning: Towards Clinical Implementation** - R. Bohoslavsky*, M. Witte, M. van Herk

Coffee/Refreshments

3:30 pm - 4:00 pm

-Room: ZHW

Posters & Commercial Exhibits

4:00 pm - 5:30 pm

-Room: ZHW

Poster Viewing

01 Improving the Accuracy of TG-43 Dose Calculations for Low-Dose Rate Brachytherapy with GPU-Based Raytracing - P. Després*, J. Gariépy, J. Carrier, S. Hissoiny, B. Ozell, L. Beaulieu, F. Verhaegen

02 Accelerating the Feldkamp, Davis, and Kress Back-Projection Algorithm Using GPUs - J. Shackleford*, G. Sharp, N. Kandasamy

03 A Development Platform for Parallel Applications in Radiation Therapy Treatment Planning - S. Morrill*, C. Brack

04 A Parallel Pencil Kernel Algorithm for IMRT with Photons - M. Siggel*, P. Ziegenhein, S. Nill, U. Oelfke

05 Cloud Computing as a Monte Carlo Cluster for Radiation Therapy - R. Keyes*, C. Romano, D. Arnold, S. Luan

06 VolumeViewer: A Tool for Examining the Use of Non-Axial Image Planes in Treatment Planning - C. Abraham*, D. Low, R. Sowell, G. Gokhroo, C. Grimm, T. Ju

07 Development of a Volume Rendering Visualization Toolkit for Clinical Radiotherapy Applications - J. Wolfgang*, A. Gemmel, J. Lee, G. Sharp, G. Chen

08 Potential Issues Associated with Videoconferencing in Oncology Multidisciplinary Team Meetings - G. Menezes*, L. Maher, J. Kenny, M. Quinn, R. Miller, M. Coffey, A. Craig

09 Setting An Integrity System for a Linux Treatment Planning System Using Tripwire: HOW TO - F. Saez-Beltran*, M. Saez-Beltran

10 Time Factor for Continuous and Fractionated Radiation Therapy - M. Hossain*, D. Leeper

11 The Impact of Accelerator Output Variations On Dose Distributions in Intensity Modulated Proton Therapy - X. Mo*, D. Westerly, T. Mackie

12 Evaluation of Superficial Dose From Proton Therapy Beams - J. Rah*, D. Shin, U. Hwang, H. Jeong, D. Kim, D. Lee, S. Lee, M. Yoon, S. Lee, S. Park

13 The Effects of Inhomogeneities On the Penumbra Region in Bragg-Curve of Proton - T. Suh, W. Jung, S. Park, J. Rah, S. Park*

14 High Electron Beam Dose Modification Using Transverse Magnetic Fields - S. Koren*, I. Veltchev, C. Ma

15 Fast Algorithm for Carbon Therapy Dose Calculation - I. Veltchev*, J. Fan, J. Li, C. Ma

16 BEAMnrc Monte Carlo Modelling of Linear Accelerator Using Parallel Computing Grid - Validation of a Common, Fixed Geometry Model for Photon and Electron Beams - J. Ojala*, S. Hyödynmaa, M. Pitkänen

17 Reducing Radiation Exposure in KV-CBCT with Different Scan Techniques - G. Ding*, P. Munro

18 Validation of the AAA Dose Calculation Algorithm for Simple Inhomogeneity Geometries: A Monte-Carlo Study - B. Harris, M. Moody, P. Charles, J. Doody, J. Boyd, A. Fielding*

19 Performance Benchmarks of Different Multi-Processor Workstations Using a Commercial Monte Carlo Dose Calculation Algorithm - M. Fippel*

20 Monte Carlo Accelerator Source Optimisation - E. Conneely*, A. Alexander, G. Stroian, J. Seuntjens, M. Foley

21 Performance Characteristics of An In-House Optical Cone Beam CT Scanner for Gel Dosimetry - P. Ravindran*, H. Thomas

22 Development and Application of Independent Dose Validation Software for Tomotherapy - W. He, L. Vazquez Q, A. Gutiérrez, S. Stathakis, H. Alkhatib, C. Shi, N. Papanikolaou*

23 A Python Tool Developed to Compare TPS Planar Doses and EPID Measurements - P. Tercier*, P. Bourgeois, A. Allal

24 Independent Dose Calculation for Helical Tomotherapy: A Feasibility Study - E. Dzintars*, S. Stathakis, N. Papanikolaou

25 Dosimetric Evaluation of CMS XiO Superposition Convolution Algorithm for Siemens MLC - T. Lin*, M. Hossain, C. Ma

26 Phantom Study of a Simple Monte Carlo Dose Calculation System for a Verification of An Intracaviraty High Dose Rate Brachytherapy Plan - K. Cheong*, M. Lee, S. Kang, S. Park, T. Hwang, K. Kim, D. Oh, H. Bae, T. Suh

27 Practical Implementation of Collapsed Cone Convolution Algorithm for Treatment Planning System - W. Cho*, J. Park, W. Jung, J. Lee, L. Xing, T. Suh

28 Generalized Equivalent Field Size for Non-Uniform Fluence in IMRT Dose Calculation - M. Chen*, Q. Chen, W. Lu

29 Comparison of Dosimetric Characteristics Using High Resolution Detecor in Small Fields - K. Chang*, B. Lee, Y. Kim, B. Park, S. Hong, J. Lee, J. Lee, K. Choi

30 A Comprehensive Patient Chart Verification Software - P. Munger*

31 Dynamic Log Files in Day-To-Day Control of MLC Leaves Position in Dynamic Treatment Plans - W. Osewski*, &. Dolla, A. Grządziel, K. Ślosarek
32 Effect of Multi-Leaf Collimator and Set-Up Error On Intensity Modualated Radiation Therapy: Bio-Physical Perspective - J. Lee*, J. Park, J. Park, J. Chung, K. Choi, D. Lee, S. Hong, J. Kim, T. Suh
33 Dose Painting by Numbers for Lung Tumors Using a Plugin for the Pinnacle3 Treatment Planning Sytem - A. Zwanenburg, G. Meijer*, J. Steenhuijsen, M. Bal
34 Motion-Weighted Dose-Volume Histogram and Its Validation with Four-Dimensional Dosimetry Using Deformable Image Registration - G. Zhang, V. Feygelman, T. Huang, C. Stevens, W. Li, T. Dilling*
35 Evaluation of a Semi-Automatic and a Manual Visual Method for Selecting the Midventilation Bin in 4DCT Scans of Lung Cancer Patients - D. Nygaard*, G. Persson, P. Munck af Rosenschöld, L. Specht, A. Roed, S. Korreman
36 A Semi-Infinite Linear Programming Approach to Inverse Planning for Perfexion Radiotherapy - H. Ghaffari, D. Aleman*, M. Ruschin, D. Jaffray
37 Optimizing the Trade-Off Between Number of Beam Starting Points and Plan Quality in Robotic Radiosurgery - A. Schlaefer*, T. Wolschon
38 Comparison of Target Coverage and Organs at Risk Dose Between Simultaneous Integrated Boost Whole Field Intensity Modulated Radiation Therapy and a Junctioned IMRT with Conventional Radiotherapy Field in Treatment of Nasopharyngeal Carcinoma - J. Chung*, J. Lee, J. Kim, I. Kim, S. Hong, D. Lee, K. Choi, J. Lee, S. Ye, T. Suh
39 Automated Iterative Inverse Planning of IMRT - J. Chen*, I. Xhaferllari, K. Bzdusek, E. Wong
40 Dose Volume Histogram Management for Biologically Guided Planning - Y. Han*, H. Park, E. Shin, Y. Ahn, S. Ju, D. Oh, J. Kim, D. Choi
41 Dosimetric Variation Due to the Geometric Uncertainty in the FIMRT for Breast Cancer - T. Hwang*, S. Kang, K. Cheong, S. Park, M. Lee, K. Kim, D. Oh, H. Bae, T. Suh
42 Dosimetric Study in Vaginal Balloon Packing Filled with Radio-Contrast in HDR Brachytherapy Treatment - A. Saini, S. Finkelstein, G. Zhang, M. Biagioli*
43 Introducing An Energy Margin to Minimize the CTV Under-Dose Due to Inter-Fractional Motion for Distal Edge Tracking (DET) Based Intensity Modulated Proton Therapy (IMPT) - M. Zhang*, T. Mackie
44 Development of An Automated Compensator Design System for Modulated Electron Radiotherapy - P. Tynan*, S. Stathakis, N. Papanikolaou
45 A Constrained Optimization Approach for Metal Artifact Reduction in Computed Tomography - X. Zhang*, J. Wang, L. Xing
46 A Binary Image Reconstruction Technique for Accurate Determination of the Shape and Location of Metal Objects in X-Ray Computed Tomography - L. Xing*, J. Wang
47 QA for Radiotherapy MR Simulators - L. Chen*, T. Richardson, M. Farri, C. Ma
48 Low-Dose Cone-Beam CT Imaging for Radiotherapy - J. Wang*, L. Xing
49 Binary CT Image Reconstruction with Limited Number of Projections for Metal Artifacts Removal - B. Meng*, J. Wang, L. Xing
50 Quantification and Validation of DCE-CT Using a Novel Dynamic Flow Phantom - B. Driscoll, H. Keller, C. Coolens*
51 The Development of Initial Phase Program for the Determination of the Biological Clinical Target Volumes Using Multi-Functional Parametric Maps - J. Park*, J. Lee, W. Jung, K. Ahn, B. Choe, T. Suh
52 Methods to Fully Generate Improved CBCT Images From Partially-Blocked Projection Data - J. Jin*, L. Ren, Q. Liu, J. Kim, N. Wen, B. Movsas, I. Chetty
53 Static Multiple-Slit System for Scatter Rejection in Cone-Beam CT - J. Chang*, T. Suh, D. Jang, L. Xing, S. Kim
54 Computation of CT Data Sets Suitable for Radiotherapy Planning From CBCT Projections Acquired with An Elekta Synergy XVI Unit - G. Poludniowski*, P. Evans, V. Hansen, S. Webb
55 Real-Time Contour Propagation for On-Line MRI Guided Radiotherapy - M. Stam*, S. Crijns, J. Lagendijk, B. Raaymakers
56 Apparent Motion Clustering On Cone-Beam Fluoroscopic Images for Thorax Tracking - L. Grezes-Besset*, J. Schaerer, P. Clarysse, D. Sarrut

57 Detection of Moving Targets in a Phantom Study - M. Schwarz*, S. Nill, R. Bendl
58 Is the Use of An Abdominal Compression Relevant in Lung Stereotactic Body Radiation Therapy? - G. Bouilhol*, M. Ayadi, J. Schaerer, L. Claude, D. Sarrut
59 Respiratory Tumor Motion Prediction Using Multi-Dimensional Adaptive Filters and Support Vector Regression - R. Wiersma*, N. Riaz, P. Shanker, O. Gudmundsson, W. Mao, B. Widrow, L. Xing
60 Image Guided Radiotherapy for Left-Sided Breast Cancer Patients: Margins for Geometrical Uncertainty of the Heart - R. Topolnjak*, M. van Herk, J.-J. Sonke
61 Quality Assurance of Tomotherapy Treatments by Exit Detector Data Sinogram: A Preliminary Study - S. Goddu*, H. Wooten, V. Rodriguez, J. Cates, B. White, R. Brame, S. Mutic, D. Low
62 Development of An EPID-Based Machine QA System - X. Chen, C. Shi, C. Buckey, H. Alkhatib, N. Papanikolaou*
63 A GPU Tailored Similarity Measure for Deformable Image Registration for Usage in Adaptive Radiotherapy - K. Giske*, R. Bendl
64 Local Setup Errors in Image-Guided Radiotherapy for Head-And-Neck Cancer Patients Immobilized with a Custom-Made Device - E. Stoiber*, K. Giske, M. Schwarz, A. Stoll, M. Muenter, J. Debus, P. Huber, C. Thieke, R. Bendl
65 Anatomy Driven Deformation - D. Gering*, W. Lu, K. Ruchala, G. Olivera
66 CBCT Guided Prostate Localization Accuracy Using Fiducial Gold Markers - J. de Boer*, M. van Herk, J. -J.Sonke
67 Quantitative Evaluation of a Deformable Registration Toolkit - M. Spadea*, P. Zaffino, M. Peroni, M. Riboldi, G. Sharp, g. baroni
68 3D Segmentation of Esophagus in Thoracic CT Images for Radiation Theraphy Planning - S. Kurugol, N. Ozay, G. Sharp*, J. Dy, D. Brooks
69 Robust Automatic Delineation of Body Contours On Cone-Beam CT Images - G. Stippel*, D. van Rooijen, A. Bel
70 Computer-Aided Detection of Small Intracranial Metastases - y. cao*
71 Quality Assurance of Image Registration of Bespoke Megavoltage Cone Beam CT and Planning CT - H. Thomas, D. Devadhas, S. Balukrishna, P. Ravindran*
72 Calculation and Visualization of Uncertainties From Multiple Segmentations - C. Sjöberg*, A. Ahnesjö
73 Application of Deformable Dose Accumulation in Pelvic IMRT Cases with Daily CBCT - Y. Cui, J. Piper, J. Galvin, Y. Xiao*
74 Coventry's Breathing Couch - o. haas*, J. Mills, D. Paluszczyszyn, D. Gill, P. Skworcow
75 4D Intensity Modulated Radiation Therapy Inverse Planning Using Spatial-Temporal (ST) Total-Variation (TV) Regularization - T. Kim*, T. Suh, L. Xing

Conference Dinner

7:30 pm - 00:00 am

Thursday, June 03, 2010

Special Lecture

9:00 am - 9:30 am

High Performance Computing

-Room 1: ZHW

Chair: Marc Kessler

9:00 am **Application of architectures for ultrafast computation** - M. Kachelrieß*

Scientific Sessions

9:30 am - 11:00 am

GPU/CPU

-Room 1: ZHW

Chair: Marc Kachelrieß / Marc Kessler

9:30 am **Ultrafast Convolution / Superposition Using Tabulated and Exponential Cumulative Cumulative Kernels On GPU** - Q. Chen*, M. Chen, W. Lu

9:48 am **GPUMCD, a New GPU-Oriented Monte Carlo Dose Calculation Platform** - S. Hissoiny*, B. Ozell, P. Després

10:00 am **CPU-Based Ultrafast IMRT Plan Optimization** - P. Ziegenhein*, J. Kunkel, S. Nill, T. Ludwig, U. Oelfke

10:12 am **GPU-Based Ultra Fast Direct Aperture Optimization in IMRT Treatment Planning** - C. Men*, X. Jia, X. Gu, S. Jiang

10:24 am **GPU-Accelerated List-Mode Reconstruction for 4-D PET** - G. Pratx*, T. Suh, C. Levin, L. Xing

10:36 am Panel Discussion

Coffee/Refreshments

11:00 am - 11:30 am

-Room: ZHW

11:30 am - 1:00 pm

Imaging

-Room 1: ZHW

Chair: Jan-Jakob Sonke

11:30 am **Methodology for Visualization and Perfusion Analysis of 4D Dynamic Contrast-Enhanced CT Imaging** - W. Wee, B. Driscoll, C. Coolens*

11:48 am **Volumetric 4D Computed Tomography with a 320 Multi-Slice Scanner** - J. Bracken*, C. Coolens, B. Driscoll

12:00 pm **Tracer Kinetic Modeling of Dynamic Contrast-Enhanced MRI at 3.0T in Oropharyngeal Cancer Patients** - A. Houweling*, N. Berg, C. Terhaard, C. Raaijmakers

12:12 pm **Real-Time Distortion-Free MR Images for MR-Guided Radiotherapy** - S. Crijns*, B. Raaymakers, J. Lagendijk

12:24 pm **Dose Advantages of Intensity Modulation in Computed Tomography** - S. Bartolac*, S. Graham, J. Siewerdsen, D. Jaffray

12:36 pm **On Proton Computed Tomography Reconstruction Using a Bayesian Inference Based Proton Path Probability Density Map** - D. Wang, T. Mackie, W. Tome*

Plan Verification

-Room 2: MG

Chair: Kay Hatherly / Bas Nijsten

11:30 am **Automated Quality Control of Clinical IMRT Planning** - K. Moore*, R. Brame, S. Mutic

11:48 am **Plan100: A Computer-Controlled System to Achieve "100%" Certainty in Correct Daily Plan Delivery** - M. Dirkx*, A. Akhiat, P. Voet, B. Kanis, B. van der Leije, Y. Seppenwoolde, P. Levendag, B. Heijmen

12:00 pm **WebTRev: A Web-Based Radiotherapy Treatment Plan Review and Analysis System** - D. Khullar*, W. Bosch, L. Santanam, J. Deasy

12:12 pm **Evaluation of IGRT Dose Distributions for Prostate Cancer Using In-Room CT Techniques** - C. Ma*, G. Shan, W. Hu, Q. Xu, J. Fan, I. Emam, K. Paskalev, L. Chen

12:24 pm **Dosimetric Evaluation of Intrafraction Prostate Motion in SBRT Delivery** - L. Jiang, H. Li, T. Solberg, R. Foster*

12:36 pm **Closing the Loop of Adaptive Volumetric Modulated Arc Therapy (VMAT): Dose Reconstruction Using CBCT and Dynamic Log-Files** - J. Qian*, L. Lee, W. Liu, G. Luxton, L. Xing

Business Meeting

1:00 pm - 1:30 pm

-Room 1: ZHW

1:00 pm **Presentation Bids XVIIth ICCR 2013**

1:30 pm Meeting Close

Separate event with limited space

2:00 pm - 5:30 pm

Micro Controllers for clinical physicists

- NKI-AvL

Chair: Marcel van Herk