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Contents

xxv *Conference Committee*

Part One

SESSION 1 KEYNOTE AND IMAGING AND HEALTH ECONOMICS

- 7961 03 **Lateral organic photodetectors for imaging applications** [7961-02]
U. Shafique, K. S. Karim, Univ. of Waterloo (Canada)
- 7961 04 **Design and optimization of a dedicated cone-beam CT system for musculoskeletal extremities imaging** [7961-03]
W. Zbijewski, P. DeJean, P. Prakash, Y. Ding, J. W. Stayman, The Johns Hopkins Univ. (United States); N. Packard, R. Senn, D. Yang, J. Yorkston, Carestream Health, Inc. (United States); A. Machado, J. A. Carrino, J. H. Siewerdsen, The Johns Hopkins Univ. (United States)

SESSION 2 X-RAY IMAGING

- 7961 06 **A laser-driven undulator x-ray source: simulation of image formation and dose deposition in mammography** [7961-05]
B. Müller, Ludwig-Maximilians-Univ. München (Germany) and Helmholtz Zentrum München GmbH (Germany); H. Schlattl, Helmholtz Zentrum München GmbH (Germany); F. Grüner, Ludwig-Maximilians-Univ. München (Germany); C. Hoeschen, Helmholtz Zentrum München GmbH (Germany)
- 7961 07 **The case for single-exposure angiography using energy-resolving photon-counting detectors: a theoretical comparison of signal and noise with conventional subtraction angiography** [7961-06]
J. Tanguay, Robarts Research Institute (Canada) and The Univ. of Western Ontario (Canada); H. K. Kim, The Univ. of Western Ontario (Canada) and Pusan National Univ. (Korea, Republic of); I. A. Cunningham, Robarts Research Institute (Canada), The Univ. of Western Ontario (Canada), and Lawson Health Research Institute (Canada)
- 7961 08 **Electron field emission Particle-In-Cell (PIC) coupled with MCNPX simulation of a CNT-based flat-panel x-ray source** [7961-07]
E. J. Grant, C. M. Posada, C. H. Castaño, H. K. Lee, Missouri Univ. of Science and Technology (United States)
- 7961 09 **The effects of compensator design on scatter distribution and magnitude: a Monte Carlo study** [7961-08]
G. J. Bootsma, Univ. of Toronto (Canada) and Princess Margaret Hospital (Canada); F. Verhaegen, Maastricht Univ. Medical Ctr. (Netherlands) and McGill Univ. (Canada); D. A. Jaffray, Univ. of Toronto (Canada) and Princess Margaret Hospital (Canada)

- 7961 0A **Correlated-polarity noise reduction: feasibility of a new statistical approach to reduce image noise** [7961-133]
J. T. Dobbins III, Duke Univ. Medical Ctr. (United States) and Duke Univ. (United States); J. R. Wells, Duke Univ. Medical Ctr. (United States)
- 7961 0B **Optimization of the grid frequencies and angles in digital radiography imaging** [7961-10]
D. S. Kim, Hankuk Univ. of Foreign Studies (Korea, Republic of); S. Lee, DRTech Co. (Korea, Republic of)

SESSION 3 METROLOGY

- 7961 0C **A novel method to measure the zero-frequency DQE of a non-linear imaging system** [7961-11]
M. C. McDonald, The Univ. of Western Ontario (Canada); H. K. Kim, Pusan National Univ. (Korea, Republic of); J. H. Henry, London Health Sciences Ctr (Canada); I. A. Cunningham, The Univ. of Western Ontario (Canada) and London Health Sciences Ctr (Canada)
- 7961 0D **Use of sphere phantoms to measure the 3D MTF of FDK reconstructions** [7961-12]
J. Baek, N. J. Pelc, Stanford Univ. (United States)
- 7961 0E **3D noise power spectrum applied on clinical MDCT scanners: effects of reconstruction algorithms and reconstruction filters** [7961-13]
F. A. Miéville, Univ. Hospital Ctr. (Switzerland) and Univ. of Lausanne (Switzerland); G. Bolard, Clinic of Genolier (Switzerland); M. Benkreira, Univ. Hospital Ctr. (Switzerland) and Univ. of Lausanne (Switzerland); P. Ayestaran, General Electric Medical Systems Europe (France); F. Gudinchet, F. Bochud, F. R. Verdun, Univ. Hospital Ctr. (Switzerland) and Univ. of Lausanne (Switzerland)
- 7961 0F **NPS comparison of anatomical noise characteristics in mammography, tomosynthesis, and breast CT images using power law metrics** [7961-14]
L. Chen, J. M. Boone, A. Nosratieh, Univ. of California. Davis (United States); C. K. Abbey, Univ. of California, Santa Barbara (United States)
- 7961 0G **Imaging properties of the magnification factor in digital mammography by the generalized MTF (GMTF)** [7961-15]
H.-S. Park, H.-J. Kim, H.-M. Cho, C.-L. Lee, D.-H. Kim, S.-W. Lee, Y.-N. Choi, Yonsei Univ. (Korea, Republic of)

SESSION 4 ITERATIVE AND STATISTICAL RECONSTRUCTION

- 7961 0H **Predictive models for observer performance in CT: applications in protocol optimization** [7961-16]
S. Richard, X. Li, Duke Univ. (United States); G. Yadava, GE Healthcare (United States); E. Samei, Duke Univ. (United States)
- 7961 0I **High-order noise analysis for low dose iterative image reconstruction methods: ASIR, IRIS, and MBI** [7961-17]
S. Do, S. Singh, M. K. Kalra, Massachusetts General Hospital (United States) and Harvard Medical School (United States); W. C. Karl, Boston Univ. (United States); T. J. Brady, H. Pien, Massachusetts General Hospital (United States) and Harvard Medical School (United States)

- 7961 OJ **Adaptive iterative reconstruction** [7961-18]
H. Bruder, R. Raupach, J. Sunnegardh, M. Sedlmair, K. Stierstorfer, T. Flohr, Siemens Healthcare (Germany)
- 7961 OK **Fast iterative image reconstruction using sparse matrix factorization with GPU acceleration** [7961-19]
J. Zhou, J. Qi, Univ. of California, Davis (United States)
- 7961 OL **Precision of iodine quantification in hepatic CT: effects of reconstruction (FBP and MBIR) and imaging parameters** [7961-20]
B. Chen, E. Samei, J. Colsher, H. Barnhart, D. Marin, R. Nelson, Duke Univ. (United States)
- 7961 OM **An iterative dual energy CT reconstruction method for a K-edge contrast material** [7961-21]
M. Depypere, J. Nuyts, N. van Gastel, G. Carmeliet, F. Maes, P. Suetens, Katholieke Univ. Leuven (Belgium)

SESSION 5 DETECTORS I

- 7961 ON **Novel synthesis of large area ZnTe:O films for high-resolution imaging applications** [7961-22]
V. V. Nagarkar, B. Singh, V. B. Gaysinskiy, S. R. Miller, V. Gelfandbein, H. Bhandari, M. Squillante, Radiation Monitoring Devices, Inc. (United States)
- 7961 OO **12-inch-wafer-scale CMOS active-pixel sensor for digital mammography** [7961-23]
S. K. Heo, J. Kosonen, S. H. Hwang, T. W. Kim, Vatech Humanray Co., Ltd. (Korea, Republic of); S. Yun, H. K. Kim, Pusan National Univ. (Korea, Republic of)
- 7961 OP **Noise performance limits of advanced x-ray imagers employing poly-Si-based active pixel architectures** [7961-24]
M. Konieczek, Y. El-Mohri, L. E. Antonuk, A. Liang, Q. Zhao, H. Jiang, Univ. of Michigan (United States)
- 7961 OQ **Characterization and comparison of lateral amorphous semiconductors with embedded Frisch grid detectors on 0.18 μ m CMOS processed substrate for medical imaging applications** [7961-25]
C. Hristovski, A. Goldan, S. H. Majid, K. Wang, U. Shafique, K. Karim, Univ. of Waterloo (Canada)
- 7961 OR **Low-noise thin-film transistor array for digital x-ray imaging detectors** [7961-26]
D. Lee, Directxray Digital Imaging Technology LLC (United States)

SESSION 6 DETECTORS II

- 7961 OS **Performance characterization of a silicon strip detector for spectral computed tomography utilizing a laser testing system** [7961-27]
C. Xu, M. Danielsson, S. Karlsson, Royal Institute of Technology (Sweden); C. Svensson, Linköping Univ. (Sweden); H. Bornefalk, Royal Institute of Technology (Sweden)
- 7961 OT **Quantum-counting CT in the regime of count-rate paralysis: introduction of the pile-up trigger method** [7961-28]
S. Kappler, S. Hölzer, E. Kraff, K. Stierstorfer, T. Flohr, Siemens Healthcare (Germany)

- 7961 0U **6-Li enriched Cs₂LiYCl₆:Ce based thermal neutron detector coupled with CMOS solid-state photomultipliers for a portable detector unit** [7961-29]
C. Whitney, C. Stapels, E. Johnson, E. Chapman, G. Alberghini, J. Glodo, K. Shah, J. Christian, Radiation Monitoring Devices, Inc. (United States)
- 7961 0V **Integration of an amorphous silicon passive pixel sensor array with a lateral amorphous selenium detector for large area indirect conversion x-ray imaging applications** [7961-30]
K. Wang, Univ. of Waterloo (Canada) and Thunder Bay Regional Research Institute (Canada); M. Y. Yazdandoost, R. Keshavarzi, K.-W. Shin, C. Hristovski, S. Abbaszadeh, F. Chen, S. H. Majid, K. S. Karim, Univ. of Waterloo (Canada)
- 7961 0W **Simulation of one-dimensionally polarized x-ray semiconductor detectors** [7961-31]
K. J. Engel, C. Herrmann, Philips Research Labs. (Germany)
- 7961 0X **Electrical interface characteristics (I-V), optical time of flight measurements, and the x-ray (20 keV) signal response of amorphous-selenium/crystalline-silicon heterojunction structures** [7961-32]
D. M. Hunter, C. A. Ho, Sunnybrook Health Sciences Ctr. (Canada); G. Belev, Univ. of Saskatchewan (Canada); G. De Crescenzo, Thunder Bay Regional Research Institute (Canada); S. O. Kasap, Univ. of Saskatchewan (Canada); M. J. Yaffe, Sunnybrook Health Sciences Ctr. (Canada) and Univ. of Toronto (Canada)

SESSION 7 BREAST IMAGING

- 7961 0Z **Comparison of 3D and 2D breast density estimation from synthetic ultrasound tomography images and digital mammograms of anthropomorphic software breast phantoms** [7961-34]
P. R. Bakic, Univ. of Pennsylvania (United States); C. Li, E. West, M. Sak, Karmanos Cancer Institute, Wayne State Univ. (United States); S. C. Gavenonis, Univ. of Pennsylvania (United States); N. Duric, Karmanos Cancer Institute, Wayne State Univ. (United States); A. D. A. Maidment, Univ. of Pennsylvania (United States)
- 7961 10 **The effect of characteristic x-rays on the spatial and spectral resolution of a CZT-based detector for breast CT** [7961-35]
S. J. Glick, Univ. of Massachusetts Medical School (United States); C. S. Didier, Massachusetts Institute of Technology (United States)
- 7961 11 **Analysis of multilayer and single layer x-ray detectors for contrast-enhanced mammography using imaging task** [7961-36]
N. Allec, S. Abbaszadeh, K. S. Karim, Univ. of Waterloo (Canada)
- 7961 12 **Optimization of mammography with respect to anatomical noise** [7961-37]
E. Fredenberg, Royal Institute of Technology (Sweden); B. Svensson, Sectra Mamea AB (Sweden); M. Danielsson, Royal Institute of Technology (Sweden); B. Lazzari, General Hospital of Pistoia (Italy); B. Cederström, Royal Institute of Technology (Sweden)
- 7961 13 **Issues in characterizing anatomic structure in digital breast tomosynthesis** [7961-38]
B. A. Lau, I. Reiser, R. M. Nishikawa, The Univ. of Chicago (United States)

- 7961 14 **Evaluation of photon-counting spectral breast tomosynthesis** [7961-39]
N. Dahlman, E. Fredenberg, Royal Institute of Technology (Sweden); M. Åslund, M. Lundqvist, Sectra Mamea AB (Sweden); F. Diekmann, Charité Univ. Hospital (Germany); M. Danielsson, Royal Institute of Technology (Sweden)

SESSION 8 TOMOSYNTHESIS I: RECONSTRUCTION

- 7961 15 **Tomosynthesis imaging with 2D scanning trajectories** [7961-40]
K. Khare, B. E. H. Claus, J. W. Eberhard, GE Global Research (United States)
- 7961 16 **Dynamic reconstruction and rendering of 3D tomosynthesis images** [7961-41]
J. Kuo, P. A. Ringer, S. G. Fallows, Real-Time Tomography, LLC (United States); P. R. Bakic, A. D. A. Maidment, Univ. of Pennsylvania (United States); S. Ng, Real-Time Tomography, LLC (United States)
- 7961 17 **Adaptive diffusion regularization for enhancement of microcalcifications in digital breast tomosynthesis (DBT) reconstruction** [7961-42]
Y. Lu, H.-P. Chan, J. A. Fessler, L. Hadjiiski, J. Wei, M. M. Goodsitt, Univ. of Michigan (United States)
- 7961 18 **Comparison of model-observer and human-observer performance for breast tomosynthesis: effect of reconstruction and acquisition parameters** [7961-43]
M. Das, H. C. Gifford, Univ. of Massachusetts Medical School (United States)
- 7961 19 **A second pass correction method for calcification artifacts in digital breast tomosynthesis** [7961-44]
K. Erhard, M. Grass, T. Nielsen, Philips Research Labs. Hamburg (Germany)

SESSION 9 TOMOSYNTHESIS II

- 7961 1A **3D task-based performance assessment metrics for optimization of performance and dose in breast tomosynthesis** [7961-45]
S. Richard, E. Samei, Duke Univ. (United States)
- 7961 1B **Dose and diagnostic image quality in digital tomosynthesis imaging of facial bones in pediatrics** [7961-46]
J. M. King, CancerCare Manitoba (Canada); S. Hickling, CancerCare Manitoba (Canada) and The Univ. of Western Ontario (Canada); I. A. Elbakri, CancerCare Manitoba (Canada) and Univ. of Manitoba (Canada); M. Reed, J. Wrogemann, The Children's Hospital of Winnipeg (Canada)
- 7961 1C **A 3D linear system model for the optimization of dual-energy contrast-enhanced digital breast tomosynthesis** [7961-47]
Y.-H. Hu, W. Zhao, Stony Brook Univ. Health Sciences Ctr. (United States)
- 7961 1D **Effects of image lag and scatter for dual-energy contrast-enhanced digital breast tomosynthesis using a CsI flat-panel based system** [7961-48]
A.-K. Carton, S. Puong, R. Iordache, S. Muller, GE Healthcare France (France)

- 7961 1E **Investigation of the effect of tube motion in breast tomosynthesis: continuous or step and shoot?** [7961-49]
E. Shaheen, N. Marshall, H. Bosmans, Univ. Hospitals Leuven (Belgium)
- 7961 1F **Real-time scanning beam digital x-ray image guidance system for transbronchial needle biopsy** [7961-50]
S. Yoon, Stanford Univ. (United States); B. P. Wilfley, Triple Ring Technologies, Inc. (United States); K. Jaspers, superDimension, Inc. (United States); G. Krishna, Palo Alto Medical Foundation (United States); R. Fahrig, Stanford Univ. (United States)

SESSION 10 X-RAY IMAGING: PHASE CONTRAST, DIFFRACTION

- 7961 1G **Towards x-ray differential phase contrast imaging on a compact setup** [7961-51]
T. Thüring, Paul Scherrer Institute (Switzerland) and Swiss Federal Institute of Technology (Switzerland); P. Modregger, Paul Scherrer Institute (Switzerland) and Univ. of Lausanne (Switzerland); B. R. Pinzer, Z. Wang, Paul Scherrer Institute (Switzerland); S. Rufshäuser, Swiss Federal Institute of Technology (Switzerland) and Paul Scherrer Institute (Switzerland); C. David, Paul Scherrer Institute (Switzerland); T. Grund, J. Kenntner, Karlsruhe Institute of Technology (KIT) (Germany); M. Stampanoni, Paul Scherrer Institute (Switzerland) and Swiss Federal Institute of Technology (Switzerland)
- 7961 1H **Beam hardening in x-ray differential phase contrast computed tomography** [7961-52]
N. Bevins, J. Zambelli, K. Li, Z. Qi, G.-H. Chen, Univ. of Wisconsin-Madison (United States)
- 7961 1J **Spectroscopic measurements concerning grating-based x-ray phase-contrast imaging** [7961-54]
T. Weber, P. Bartl, F. Bayer, J. Durst, W. Haas, T. Michel, G. Pelzer, A. Ritter, G. Anton, Friedrich-Alexander-Univ. of Erlangen-Nürnberg (Germany)
- 7961 1K **3D diffraction tomography for visualization of contrast media** [7961-55]
V. M. Pai, National Institutes of Health (United States); A. Stein, Harvard Medical School (United States); M. Kozłowski, A. George, National Institutes of Health (United States); R. Kopace, Duke Univ. (United States); E. Bennett, National Institutes of Health (United States); J. A. Auxier, Oregon State Univ. (United States); H. Wen, National Institutes of Health (United States)

SESSION 11 IMAGE RECONSTRUCTION

- 7961 1L **Penalized-likelihood reconstruction for sparse data acquisitions with unregistered prior images and compressed sensing penalties** [7961-56]
J. W. Stayman, W. Zbijewski, Y. Otake, A. Uneri, S. Schafer, J. Lee, J. L. Prince, J. H. Siewerdsen, Johns Hopkins Univ. (United States)
- 7961 1M **Quantification of temporal resolution and its reliability in the context of TRI-PICCS and dual source CT** [7961-57]
C. Maaß, M. Kachelrieß, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany)
- 7961 1N **Evaluation of a novel CT image reconstruction algorithm with enhanced temporal resolution** [7961-58]
H. Schöndube, T. Allmendinger, K. Stierstorfer, H. Bruder, T. Flohr, Siemens AG (Germany)

- 7961 1O **A Compton imaging algorithm for on-line monitoring in hadron therapy** [7961-59]
J. E. Gillam, C. Lacasta, I. Torres-Espallardo, C. Candela Juan, G. Llosá, P. Solevi, J. Barrio, M. Rafecas, Univ. de València (Spain)
- 7961 1P **Method for reducing windmill artifacts in multislice CT images** [7961-60]
K. M. Brown, S. Žabić, Philips Healthcare (United States)
- 7961 1Q **Helical x-ray differential phase contrast computed tomography** [7961-61]
Z. Qi, P. Thériault-Lauzier, N. Bevins, J. Zambelli, K. Li, G.-H. Chen, Univ. of Wisconsin-Madison (United States)

SESSION 12 CT III: MULTI-ENERGY

- 7961 1R **Synthetic CT: simulating arbitrary low dose single and dual energy protocols** [7961-62]
A. S. Wang, N. J. Pelc, Stanford Univ. (United States)
- 7961 1S **A tabletop clinical x-ray CT scanner with energy-resolving photon counting detectors** [7961-63]
J. Cammin, S. Srivastava, The Johns Hopkins Univ. School of Medicine (United States); W. C. Barber, J. S. Iwanczyk, N. E. Hartsough, DxRay Inc. (United States); E. Nygard, J. C. Wessel, N. Malakhov, Interon AS (Norway); K. Taguchi, The Johns Hopkins Univ. School of Medicine (United States)
- 7961 1T **Investigating possible improvements in image quality with energy-weighting photon-counting breast CT** [7961-64]
S. J. Glick, Univ. of Massachusetts Medical School (United States); K. Kalluri, Univ. of Massachusetts at Lowell (United States)
- 7961 1U **Temporal and spectral reconstruction algorithms for x-ray CT** [7961-65]
S. M. Johnston, Duke Univ. (United States) and Duke Univ. Medical Ctr. (United States); C. T. Badea, Duke Univ. Medical Ctr. (United States)
- 7961 1V **Material separation in x-ray CT with energy resolved photon-counting detectors** [7961-66]
X. Wang, The Johns Hopkins Univ. (United States); D. Meier, Gamma Medica-Ideas (Norway); K. Taguchi, The Johns Hopkins Univ. (United States); D. J. Wagenaar, B. E. Patt, Gamma Medica-Ideas, Inc. (United States); E. C. Frey, The Johns Hopkins Univ. (United States)

SESSION 13 NOVEL SYSTEMS

- 7961 1W **An inverse geometry CT system with stationary source arrays** [7961-67]
S. S. Hsieh, Stanford Univ. (United States); J. A. Heanue, T. Funk, Triple Ring Technologies, Inc. (United States); W. S. Hinshaw, Stanford Univ. (United States) and Triple Ring Technologies, Inc. (United States); N. J. Pelc, Stanford Univ. (United States)
- 7961 1X **Dual-energy micro-CT imaging for differentiation of iodine- and gold-based nanoparticles** [7961-68]
C. T. Badea, S. M. Johnston, Y. Qi, Duke Univ. Medical Ctr. (United States); K. Ghaghada, Univ. of Texas Health Sciences Ctr. (United States); G. A. Johnson, Duke Univ. Medical Ctr. (United States)

- 7961 1Y **Design and development of MR-compatible SPECT systems for simultaneous SPECT-MR imaging of small animals** [7961-69]
 B. M. Tsui, The Johns Hopkins Univ. (United States); J. W. Hugg, Gamma Medica-Ideas, Inc. (United States); J. Xu, S. Chen, The Johns Hopkins Univ. (United States); D. Meier, Gamma Medica-Ideas, Inc. (United States); W. Edelstein, A. El-Sharkawy, The Johns Hopkins Univ. (United States); D. J. Wagenaar, B. E. Patt, Gamma Medica-Ideas, Inc. (United States)
- 7961 1Z **Freehand SPECT in low uptake situations** [7961-70]
 T. Lasser, S. I. Ziegler, N. Navab, Technische Univ. München (Germany)
- 7961 20 **Forward model of Cerenkov luminescence tomography with the third-order simplified spherical harmonics approximation** [7961-71]
 J. Zhong, J. Tian, X. Yang, C. Qin, Institute of Automation (China)
- 7961 21 **A preclinical SPECT camera with depth-of-interaction compensation using a focused-cut scintillator** [7961-72]
 F. Alhassen, Univ. of California, San Francisco (United States); H. Kudrolli, B. Singh, Radiation Monitoring Devices, Inc. (United States); S. Kim, Y. Seo, R. G. Gould, Univ. of California, San Francisco (United States); V. V. Nagarkar, Radiation Monitoring Devices, Inc. (United States)

SESSION 14 CT IV: CONE BEAM

- 7961 22 **Evaluation of an erbium modulator in x-ray scatter correction using primary modulation** [7961-73]
 H. Gao, Stanford Univ. (United States); T. Niu, L. Zhu, Georgia Institute of Technology (United States); R. Fahrig, Stanford Univ. (United States)
- 7961 23 **Analysis of vertical and horizontal circular C-arm trajectories** [7961-74]
 A. Maier, J.-H. Choi, A. Keil, Stanford Univ. (United States); C. Niebler, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); M. Sarmiento, Siemens AG (Germany); A. Fieselmann, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); G. Gold, S. Delp, R. Fahrig, Stanford Univ. (United States)
- 7961 24 **Functional phase-correlated micro-CT imaging of small rodents with low dose** [7961-75]
 S. Sawall, F. Bergner, A. Hess, Friedrich-Alexander-Univ. of Erlangen-Nürnberg (Germany); R. Lapp, M. Mronz, CT Imaging GmbH (Germany); M. Karolczak, M. Kachelrieß, Friedrich-Alexander-Univ. of Erlangen-Nürnberg (Germany)
- 7961 25 **Scatter correction for cone-beam computed tomography using moving blocker strips** [7961-76]
 J. Wang, W. Mao, T. Solberg, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States)
- 7961 26 **Single-scan scatter correction for cone-beam CT using a stationary beam blocker: a preliminary study** [7961-77]
 T. Niu, L. Zhu, Georgia Institute of Technology (United States)

Part Two

SESSION 15 DOSE

- 7961 27 **Verification of the performance accuracy of a real-time skin-dose tracking system for interventional fluoroscopic procedures** [7961-78]
D. R. Bednarek, J. Barbarits, V. K. Rana, S. P. Nagaraja, M. S. Josan, S. Rudin, Univ. at Buffalo (United States)
- 7961 28 **Energy deposition in the breast during CT scanning: quantification and implications for dose reduction** [7961-79]
F. Rupcich, Marquette Univ. (United States); I. Kyprianou, A. Badal, U.S. Food and Drug Administration (United States); T. G. Schmidt, Marquette Univ. (United States)
- 7961 29 **Uncertainties of organ absorbed doses to patients from ¹⁸F-choline** [7961-80]
W. B. Li, T. Janzen, M. Zankl, A. Giussani, C. Hoeschen, Helmholtz Zentrum München (Germany)
- 7961 2A **The feasibility of universal DLP-to-risk conversion coefficients for body CT protocols** [7961-81]
X. Li, E. Samei, W. P. Segars, E. K. Paulson, D. P. Frush, Duke Univ. (United States)
- 7961 2B **X-ray dose reduction by adaptive source equalization and electronic region-of-interest control** [7961-82]
S. Burion, A. Sandman, K. Bechtel, Triple Ring Technologies, Inc. (United States); E. Solomon, NovaRay Medical, Inc. (United States); T. Funk, Triple Ring Technologies, Inc. (United States)
- 7961 2C **Effect of contrast magnitude and resolution metric on noise-resolution tradeoffs in x-ray CT imaging: a comparison of non-quadratic penalized alternating minimization and filtered backprojection algorithms** [7961-83]
J. D. Evans, Virginia Commonwealth Univ. (United States); D. G. Politte, B. R. Whiting, J. A. O'Sullivan, Washington Univ. in St. Louis (United States); J. F. Williamson, Virginia Commonwealth Univ. (United States)

SESSION 16 SPECIAL SESSION I: DOSE

- 7961 2D **Definitions and outlook targeting x-ray exposure of patients in diagnostic imaging (Invited Paper)** [7961-84]
D. F. Regulla, Helmholtz Zentrum München GmbH (Germany)
- 7961 2F **How do we measure dose and estimate risk? (Invited Paper)** [7961-86]
C. Hoeschen, D. Regulla, H. Schlattl, N. Petoussi-Henss, W. B. Li, M. Zankl, Helmholtz Zentrum München (Germany)
- 7961 2G **The accuracy of estimated organ doses from Monte Carlo CT simulations using cylindrical regions of interest within organs** [7961-87]
M. Khatonabadi, J. Sandberg, Univ. of California, Los Angeles (United States); N. Eshghi, Heinrich-Heine-Univ. Düsseldorf (Germany); J. J. DeMarco, Univ. of California, Los Angeles (United States); E. Angel, Toshiba America Medical Systems, Inc. (United States); A. C. Turner, D. Zhang, C. C. Cagnon, M. F. McNitt-Gray, Univ. of California, Los Angeles (United States)

- 7961 2H **An algorithm for intelligent sorting of CT-related dose parameters** [7961-88]
T. S. Cook, Hospital of the Univ. of Pennsylvania (United States); S. L. Zimmerman, The Johns Hopkins Univ. (United States); S. Steingal, W. W. Boonn, W. Kim, Hospital of the Univ. of Pennsylvania (United States)

SESSION 17 SPECIAL SESSION II: DOSE

- 7961 2K **Dose reduction using prior image constrained compressed sensing (DR-PICCS)** [7961-91]
J. Tang, P. Thériault Lauzier, G.-H. Chen, Univ. of Wisconsin-Madison (United States)
- 7961 2L **A clinical comparison study of a novel statistical iterative and filtered backprojection reconstruction** [7961-92]
P. B. Noël, A. A. Fingerle, B. Renger, E. J. Rummeny, M. Dobritz, Technische Univ. München (Germany)

POSTER SESSION: CT

- 7961 2M **Iterative CT reconstruction integrating SART and conjugate gradient** [7961-93]
Y. Pan, Argonne National Lab. (United States); R. Whitaker, The Univ. of Utah (United States)
- 7961 2N **Iterative helical cone-beam CT reconstruction using graphics hardware: a simulation study** [7961-94]
Y. Pan, Argonne National Lab. (United States); R. Whitaker, Univ. of Utah (United States)
- 7961 2O **Iterative volume of interest image reconstruction in helical cone beam x-ray CT using a stored system matrix approach** [7961-95]
J. Xu, B. M. W. Tsui, The Johns Hopkins Univ. (United States)
- 7961 2P **Accelerate multi-dimensional CT scanner simulation with GPU** [7961-96]
Y. Han, J. Gao, Hitachi (China) Research & Development Corp. (China); O. Miyazaki, Hitachi Medical Corp. (Japan)
- 7961 2Q **OpenCL: a viable solution for high-performance medical image reconstruction?** [7961-97]
C. Siegl, H. G. Hofmann, B. Keck, M. Prümmer, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); J. Hornegger, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany) and Erlangen Graduate School in Advanced Optical Technologies (SAOT) (Germany)
- 7961 2R **Improved total variation regularized image reconstruction (iTV) applied to clinical CT data** [7961-98]
L. Ritschl, M. Kachelrieß, Friedrich-Alexander-Univ. of Erlangen-Nürnberg (Germany)
- 7961 2S **Ring artifact corrections in flat-panel detector based cone beam CT** [7961-99]
E. M. A. Anas, Bangladesh Univ. of Engineering and Technology (Bangladesh); J. Kim, S. Y. Lee, Kyung Hee Univ. (Korea, Republic of); M. K. Hasan, Bangladesh Univ. of Engineering and Technology (Bangladesh) and Kyung Hee Univ. (Korea, Republic of)

- 7961 2T **Backprojection-filtration image reconstruction from partial cone-beam data for scatter correction** [7961-100]
R. Pua, KAIST (Korea, Republic of); J. Min, KAIST (Korea, Republic of) and Nano Focus Ray Inc. (Korea, Republic of); B. Yoo, KAIST (Korea, Republic of); K.-W. Kim, Nano Focus Ray Inc. (Korea, Republic of); G. Cho, S. Cho, KAIST (Korea, Republic of)
- 7961 2U **Fast 4D cone-beam reconstruction using the McKinnon-Bates algorithm with truncation correction and nonlinear filtering** [7961-101]
Z. Zheng, Varian Medical Systems (United States) and Stony Brook Univ. (United States); M. Sun, J. Pavkovich, J. Star-Lack, Varian Medical Systems (United States)
- 7961 2W **Contrast adaptive total p-norm variation minimization approach to CT reconstruction for artifact reduction in reduced-view brain perfusion CT** [7961-103]
C. W. Kim, Seoul National Univ. (Korea, Republic of) and Seoul National Univ. College of Medicine (Korea, Republic of); J. H. Kim, Seoul National Univ. (Korea, Republic of)
- 7961 2X **Expectation maximization and total variation-based model for computed tomography reconstruction from undersampled data** [7961-104]
M. Yan, L. A. Vese, Univ. of California, Los Angeles (United States)
- 7961 2Y **A comparison of four algorithms for metal artifact reduction in CT imaging** [7961-105]
C. Golden, National Univ. of Ireland Galway (Ireland) and Stanford Univ. (United States); S. R. Mazin, F. E. Boas, G. Tye, P. Ghanouni, G. Gold, M. Sofilos, N. J. Pelc, Stanford Univ. (United States)
- 7961 2Z **A study on regularization parameter choice for interior tomography based on truncated Hilbert transform** [7961-107]
J. Wu, X. Mou, S. Tang, Xi'an Jiaotong Univ. (China)
- 7961 30 **Interior tomography from low-count local projections and associated Hilbert transform data** [7961-108]
Q. Xu, Xi'an Jiaotong Univ. (China); H. Yu, Wake Forest Univ. Health Sciences (United States); X. Mou, Xi'an Jiaotong Univ. (China); G. Wang, Wake Forest Univ. Health Sciences (United States) and Virginia Polytechnic Institute and State Univ. (United States)
- 7961 31 **Compressed sensing algorithms for fan-beam CT image reconstruction** [7961-109]
J. Zhang, J. Wang, G. Xu, Univ. of Wisconsin-Milwaukee (United States); J.-B. Thibault, GE Healthcare (United States)
- 7961 32 **Low-dose dual-energy cone-beam CT using a total-variation minimization algorithm** [7961-110]
J. Min, KAIST (Korea, Republic of) and Nano Focus Ray Inc. (Korea, Republic of); T. Lee, KAIST (Korea, Republic of); K. Kim, Nano Focus Ray Inc. (Korea, Republic of); G. Cho, S. Cho, KAIST (Korea, Republic of)
- 7961 33 **Refinement of motion correction strategies for lower-cost CT for under-resourced regions of the world** [7961-111]
J. R. Wells, W. P. Segars, C. J. N. Kigongo, Duke Univ. Medical Ctr. (United States); J. T. Dobbins III, Duke Univ. Medical Ctr. (United States) and Duke Univ. (United States)

- 7961 34 **Accelerating statistical image reconstruction algorithms for fan-beam x-ray CT using cloud computing** [7961-112]
S. Srivastava, A. R. Rao, V. Sheinin, IBM Thomas J. Watson Research Ctr. (United States)
- 7961 35 **Quantitative evaluation method of noise texture for iteratively reconstructed x-ray CT images** [7961-113]
P. Thériault Lauzier, J. Tang, G.-H. Chen, Univ. of Wisconsin-Madison (United States)
- 7961 36 **An efficient scatter correction algorithm based on pre-reconstructed images of contrast enhancement and sparse-viewed Monte Carlo simulation** [7961-114]
H. Yan, X. Mou, Xi'an Jiaotong Univ. (China)
- 7961 37 **Task-based comparative study of iterative image reconstruction methods for limited-angle x-ray tomography** [7961-115]
R. Zeng, K. J. Myers, U.S. Food and Drug Administration (United States)
- 7961 38 **Limited data tomographic image reconstruction via dual formulation of total variation minimization** [7961-116]
K. E. Jang, Y. Sung, K. Lee, J. Lee, Samsung Advanced Institute of Technology (Korea, Republic of); S. Cho, KAIST (Korea, Republic of)
- 7961 39 **Cone-beam CT data-driven pose correction for analytic reconstruction methods** [7961-117]
J. Cates, The Univ. of Utah (United States); Y. Pan, Argonne National Lab. (United States); V. Battle, GE Healthcare (United States); R. Whitaker, The Univ. of Utah (United States)
- 7961 3A **A simple image based method for obtaining electron density and atomic number in dual energy CT** [7961-118]
T. P. Szczykutowicz, Z. Qi, G.-H. Chen, Univ. of Wisconsin-Madison (United States)
- 7961 3B **A scatter artifact reduction technique in dual-energy computed tomography systems** [7961-119]
J. Fan, N. Chandra, J. Hsieh, GE Healthcare (United States)
- 7961 3C **Investigation of a method to estimate the MTF and NPS of CT towards creating an international standard** [7961-120]
C. C. Brunner, Technische Univ. München (Germany) and Helmholtz Zentrum München (Germany); B. Renger, Technische Univ. München (Germany); C. Hoeschen, Helmholtz Zentrum München (Germany); I. S. Kyprianou, U.S. Food and Drug Administration (United States)
- 7961 3D **XCAT/DRASIM: a realistic CT/human-model simulation package** [7961-121]
G. S. K. Fung, The Johns Hopkins Univ. (United States); K. Stierstorfer, Siemens Healthcare (Germany); W. P. Segars, Duke Univ. (United States); K. Taguchi, The Johns Hopkins Univ. (United States); T. G. Flohr, Siemens Healthcare (Germany); B. M. W. Tsui, The Johns Hopkins Univ. (United States)

SESSION 20 POSTER SESSION: NOISE AND DOSE, MEASUREMENT AND REDUCTION

- 7961 3E **Longitudinal tube modulation for chest and abdominal CT examinations: impact on effective patient doses calculations** [7961-122]
F. Zanca, K. Michielsen, M. Depuydt, J. Jacobs, J. Nens, K. Lemmens, R. Oyen, H. Bosmans, Univ. Hospitals Leuven (Belgium)
- 7961 3F **Dosimetric quality control of Eclipse treatment planning system using pelvic digital test object** [7961-123]
Y. Benhdech, IRCCyN, CNRS, Univ. of Nantes (France) and QualiFormeD SARL (France); S. Beaumont, QualiFormeD SARL (France); J. Guédon, IRCCyN, CNRS, Univ. of Nantes (France); S. Crespin, Ctr. Hospitalier Départemental (France)
- 7961 3G **Estimation of organ and effective dose to the patient during spinal surgery with a cone-beam O-arm system** [7961-124]
M. Söderberg, K. Abul-Kasim, A. Ohlin, M. Gunnarsson, Skåne Univ. Hospital Malmö (Sweden)
- 7961 3H **Monte Carlo modeling of the scatter radiation doses in IR** [7961-125]
E. Mah, Medical Univ. of South Carolina (United States); W. He, Clemson Univ. (United States); W. Huda, Medical Univ. of South Carolina (United States); H. Yao, Clemson Univ. (United States); B. Selby, Medical Univ. of South Carolina (United States)
- 7961 3J **Fluence estimation by deconvolution via l_1 -norm minimization** [7961-127]
J. C. García Hernández, D. Lazaro-Ponthus, M. Gmar, J. Barthe, CEA, LIST (France)
- 7961 3K **A novel noise suppression solution in cone-beam CT images** [7961-128]
Y. Fan, Stony Brook Univ. (United States); H. Lu, Fourth Military Medical Univ. (China); H. Zhu, Stony Brook Univ. (United States); J. Wang, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); Q. Lin, Z. Liang, Stony Brook Univ. (United States)
- 7961 3L **Noise reduction by projection direction dependent diffusion for low dose fan-beam x-ray computed tomography** [7961-129]
S. Tang, Xi'an Jiaotong Univ. (China) and Xi'an Univ. of Posts and Telecommunications (China); X. Mou, Xi'an, Y. Zhang, Xi'an Jiaotong Univ. (China); H. Yu, Wake Forest Univ. Health Sciences (United States)
- 7961 3M **Radiation dose reduction in computed tomography (CT) using a new implementation of wavelet denoising in low tube current acquisitions** [7961-130]
Y. Tao, S. Brunner, J. Tang, M. Speidel, H. Rowley, M. VanLysel, G.-H. Chen, Univ. of Wisconsin-Madison (United States)
- 7961 3N **Noise characteristics of x-ray differential phase contrast CT** [7961-131]
J. Zambelli, K. Li, N. Bevins, Z. Qi, G.-H. Chen, Univ. of Wisconsin-Madison (United States)
- 7961 3O **Contrast-to-noise of a non-ideal multi-bin photon-counting x-ray detector** [7961-132]
J. E. Tkaczyk, V. Lobastov, D. D. Harrison, GE Global Research (United States); A. S. Wang, Stanford Univ. (United States)
- 7961 3P **MCNP simulation of radiation doses distributions in a water phantoms simulating interventional radiology patients** [7961-134]
W. He, Clemson Univ. (United States); E. Mah, W. Huda, B. Selby, Medical Univ. of South Carolina (United States); H. Yao, Clemson Univ. (United States)

- 7961 3Q **Noise reduction in dual-source CT scanning** [7961-135]
M. Petersilka, B. Krauss, K. Stierstorfer, Siemens AG (Germany)
- 7961 3R **Relative dose in dual energy fast-kVp switching and conventional kVp imaging: spatial frequency dependent noise characteristics and low contrast imaging** [7961-136]
G. K. Yadava, N. Chandra, J. Hsieh, GE Healthcare (United States)

SESSION 21 POSTER SESSION: MRI

- 7961 3S **Determination of 3D flow velocity distributions from single-plane angiographic sequences** [7961-137]
K. R. Hoffmann, Univ. at Buffalo (United States) and Imagination Software Corp. (United States); T. Dorazio, J. Lee, J.-H. Jung, E. B. Pitman, Univ. at Buffalo (United States); A. Walczak, Univ. at Buffalo (United States) and Imagination Software Corp. (United States); X. Chen, Univ. at Buffalo (United States)
- 7961 3T **Susceptibility quantification in MRI using modified conjugate gradient least square method** [7961-138]
L. Wang, J. Langley, Q. Zhao, The Univ. of Georgia (United States)
- 7961 3U **Direct reconstruction of T_1 from k-space using a radial saturation-recovery sequence** [7961-139]
L. Chen, E. V. R. DiBella, The Univ. of Utah (United States)
- 7961 3V **Histogram analysis of ADC in brain tumor patients** [7961-140]
D. Banerjee, Old Dominion Univ. (United States); J. Wang, The Univ. of Texas M.D. Anderson Cancer Ctr. (United States); J. Li, Old Dominion Univ. (United States)
- 7961 3W **The development and application of calculated readout in spectral parallelism in magnetic resonance imaging** [7961-141]
L. Vu, S. S. So, S. Obruchkov, A. T. Cenko, J. T. Meade, Univ. of Waterloo (Canada); K. Bradshaw, Sentinelle Medical Inc. (Canada); C. Lemaire, H. Peemoeller, S. Rasheed, A. R. Hajian, Univ. of Waterloo (Canada); J. K. Kim, Thunder Bay Regional Research Institute (Canada); C. Piron, Sentinelle Medical Inc. (Canada)
- 7961 3X **Voxel magnetic field disturbance from remote vasculature in BOLD fMRI** [7961-142]
Z. Chen, Z. Chen, The Mind Research Network (United States); V. Calhoun, The Mind Research Network (United States) and Univ. of New Mexico (United States)
- 7961 3Y **Multiresolution voxel decomposition of complex-valued BOLD signals reveals phasor turbulence** [7961-143]
Z. Chen, Z. Chen, The Mind Research Network (United States); V. Calhoun, The Mind Research Network (United States) and Univ. of New Mexico (United States)
- 7961 3Z **Wavelet encoded MR image reconstruction with compressed sensing** [7961-144]
Z. Liu, B. Nutter, J. Ao, S. Mitra, Texas Tech Univ. (United States)

SESSION 22 POSTER SESSION: PET AND SPECT

- 7961 40 **Modified total variation norm for the maximum a posteriori ordered subsets expectation maximization reconstruction in fan-beam SPECT brain perfusion imaging** [7961-145]
A. Krol, SUNY Upstate Medical Univ. (United States); Z. Yang, Sun Yat-sen Univ. (China) and SUNY Upstate Medical Univ. (United States); Y. Xu, Sun Yat-sen Univ. (China) and Syracuse Univ. (United States); A. Wismüller, Univ. of Rochester Medical Ctr. (United States); D. H. Feiglin, SUNY Upstate Medical Univ. (United States)
- 7961 41 **New method for tuning hyperparameter for the total variation norm in the maximum a posteriori ordered subsets expectation maximization reconstruction in SPECT myocardial perfusion imaging** [7961-146]
Z. Yang, Sun Yat-sen Univ. (China) and SUNY Upstate Medical Univ. (United States); A. Krol, SUNY Upstate Medical Univ. (United States); Y. Xu, Sun Yat-sen Univ. (China) and Syracuse Univ. (United States); D. H. Feiglin, SUNY Upstate Medical Univ. (United States)
- 7961 42 **Effect of de-noising and DDRV correction on cone-beam SPECT reconstruction with non-uniform attenuation** [7961-147]
H. Zhang, J. Wen, Beijing Institute of Technology (China); W. Yin, Beijing Univ. of Technology (China); C. Li, K. Zhang, Beijing Institute of Technology (China); Z. Liang, Stony Brook Univ. (United States)
- 7961 43 **Quality controls and delineation protocol of PET/CT gated acquisition in function of the movement amplitude, size of spheres, and signal over background ratio** [7961-148]
C. Jaudet, D. Didierlaurent, J. Nalis, L. O. Dierickx, O. Caselles, F. Courbon, Institut Claudius Regaud (France)
- 7961 44 **Using spherical basis functions on a polar grid for iterative image reconstruction in small animal PET** [7961-149]
J. Cabello, J. F. Oliver, M. Rafecas, Univ. de València (Spain)
- 7961 45 **Full modeling of AX-PET: a new PET device with axially oriented crystals based on Geant4 and GATE** [7961-150]
P. Solevi, J. F. Oliver, J. Gillam, M. Rafecas, Univ. de València (Spain)
- 7961 46 **Observing the high resolution capabilities of a silicon PET insert probe** [7961-151]
K. Brzeziński, J. F. Oliver, J. Gillam, C. Lacasta, M. Rafecas, Univ. de València (Spain)
- 7961 47 **Ultrafast image reconstruction of a dual-head PET system by use of CUDA architecture** [7961-152]
Y. Hung, National Taiwan Univ. (Taiwan); Y. Dong, Illinois Institute of Technology (United States) and Toshiba Medical Research Institute USA, Inc. (United States); F. R. Chern, W. Wang, National Taiwan Univ. (Taiwan); C.-M. Kao, C.-T. Chen, The Univ. of Chicago (United States); C.-Y. Chou, National Taiwan Univ. (Taiwan)
- 7961 48 **Evaluation of image gating as an approach for noise estimation and optimisation of SPECT images** [7961-153]
K. Alzimami, King Saud Univ. (Saudi Arabia) and Univ. of Surrey (United Kingdom); S. Sassi, Royal Marsden Hospital NHS Foundation Trust (United Kingdom); A. Alshehri, Riyadh Military Hospital (Saudi Arabia); N. Spyrou, Univ. of Surrey (United Kingdom) and King Saud Univ. (Saudi Arabia); A. Britten, St. George's Hospital (United Kingdom)

- 7961 49 **Singles-prompt: a novel method to estimate random coincidences by using prompts and singles information** [7961-154]
J. F. Oliver, M. Rafecas, Univ. de València (Spain)

Part Three

- 7961 4A **An investigation of an application specific PET prototype with inhomogeneous-energy resolution detectors** [7961-155]
J. Liu, Q. Xie, L. Wan, Wuhan National Lab. for Optoelectronics (China) and Huazhong Univ. of Science and Technology (China)
- 7961 4B **Basic design and simulation of a SPECT microscope for in vivo stem cell imaging** [7961-156]
R. A. Moats, Y. Tang, Children's Hospital of Los Angeles (United States); J. W. Hugg, Gamma Medica (United States); D. Meier, Gamma Medica (Norway); D. Koos, California Institute of Technology (United States); N. E. Hartsough, DxRay (United States); B. E. Patt, D. J. Wagenaar, Gamma Medica (United States)

SESSION 23 POSTER SESSION: X-RAY IMAGING

- 7961 4C **K-edge subtraction imaging using a pixellated energy-resolving detector** [7961-09]
S. Pani, S. C. Saifuddin, Univ. of Surrey (United Kingdom); C. Christodoulou, Univ. College London (United Kingdom); M. Veale, P. Seller, Rutherford Appleton Lab. (United Kingdom); R. D. Speller, Univ. College London (United Kingdom); M. Wilson, Rutherford Appleton Lab. (United Kingdom); J. W. Scuffham, Univ. of Surrey (United Kingdom) and Royal Surrey County Hospital NHS Foundation Trust (United Kingdom)
- 7961 4D **Verification of nonlinearity in digital x-ray images using surrogate method** [7961-157]
A. Sugiura, Gifu Univ. of Medical Science (Japan) and Nagoya City Univ. (Japan); K. Yokoyama, Nagoya City Univ. (Japan); H. Takada, Univ. of Fukui (Japan); N. Yasuda, A. Horii, Gifu Univ. of Medical Science (Japan); K. Kida, Kasugai Municipal Hospital (Japan)
- 7961 4E **A software tool for quality assurance of computed/digital radiography (CR/DR) systems** [7961-158]
N. Desai, iCRco, Inc. (United States); D. J. Valentino, iCRco, Inc. (United States) and Univ. of California, Los Angeles (United States)
- 7961 4F **Validation of a method to convert an image to appear as if acquired using a different digital detector** [7961-159]
A. Mackenzie, The Royal Surrey County Hospital NHS Foundation Trust (United Kingdom); A. Workman, Forster Green Hospital (United Kingdom); D. R. Dance, The Royal Surrey County Hospital NHS Foundation Trust (United Kingdom) and Univ. of Surrey (United Kingdom); M. Yip, K. Wells, Univ. of Surrey (United Kingdom); K. C. Young, The Royal Surrey County Hospital NHS Foundation Trust (United Kingdom) and Univ. of Surrey (United Kingdom)
- 7961 4G **Measuring the presampled MTF from a reduced number of flat-field images using the noise response (NR) method** [7961-160]
A. Kuhls-Gilcrist, Toshiba America Medical Systems, Inc. (United States); A. Jain, D. R. Bednarek, S. Rudin, Toshiba Stroke Research Ctr., Univ. at Buffalo (United States)

SESSION 24 POSTER SESSION: DETECTORS

- 7961 4H **CZT detector in multienergy x-ray imaging with different pixel sizes and pitches: Monte Carlo simulation studies** [7961-161]
Y.-N. Choi, H.-J. Kim, H.-M. Cho, C.-L. Lee, H.-S. Park, D.-H. Kim, S.-W. Lee, H.-J. Ryu, Yonsei Univ. (Korea, Republic of)
- 7961 4I **Effect of x-ray incident direction and scintillator layer design on image quality of indirect-conversion flat-panel detector with GOS phosphor** [7961-162]
K. Sato, F. Nariyuki, H. Nomura, A. Takasu, S. Fukui, M. Nakatsu, Y. Okada, T. Nabeta, Y. Hosoi, FUJIFILM Corp. (Japan)
- 7961 4J **Graphical user interface for a dual-module EMCCD x-ray detector array** [7961-163]
W. Wang, C. Ionita, A. Kuhls-Gilcrist, Y. Huang, B. Qu, S. K. Gupta, D. R. Bednarek, S. Rudin, Toshiba Stroke Research Ctr., Univ. at Buffalo (United States)
- 7961 4K **CMOS image sensor based x-ray detector noise characterization and its fixed pattern noise correction method** [7961-164]
J. Xu, B. Nguyen, Suni Medical Imaging, Inc. (United States)
- 7961 4L **Selenium coated CMOS passive pixel array for medical imaging** [7961-165]
S. H. Majid, A. H. Goldan, B. Hadji, Univ. of Waterloo (Canada); G. Belev, Canadian Light Source (Canada); S. Kasap, Univ. of Saskatchewan (Canada); K. S. Karim, Univ. of Waterloo (Canada)
- 7961 4M **CMOS digital intra-oral sensor for x-ray radiography** [7961-166]
X. Liu, Fairchild Imaging Inc. (United States); A. Byczko, M. Choi, L. Chung, H. Do, B. Fowler, R. Ispasoiu, K. Joshi, T. Miller, A. Nagy, D. Reaves, B. Rodricks, D. Teeter, G. Wang, F. Xiao, Fairchild Imaging Inc (United States)
- 7961 4N **Design and fabrication of single grain TFTs and lateral photodiodes for low dose x-ray detection** [7961-167]
A. Arslan, R. Ishihara, J. Derakhshandeh, C. I. M. Beenakker, Delft Univ. of Technology (Netherlands)
- 7961 4O **Photon quantum shot noise limited array in amorphous silicon technology for protein crystallography applications** [7961-169]
M. Y. Yazdandoost, K. Wang, K. S. Karim, Univ. of Waterloo (Canada)
- 7961 4P **Study of gain phenomenon in lateral metal-semiconductor-metal detectors for indirect conversion medical imaging** [7961-170]
S. Abbaszadeh, N. Allec, K. Wang, F. Chen, K. S. Karim, Univ. of Waterloo (Canada)
- 7961 4Q **Complete erasing of ghost images caused by deeply trapped electrons on computed radiography plates** [7961-171]
H. Ohuchi, Tohoku Univ. (Japan); Y. Kondo, Ishinomaki Senshu Univ. (Japan)

- 7961 4S **Evaluation and comparison of high-resolution (HR) and high-light (HL) phosphors in the micro-angiographic fluoroscope (MAF) using generalized linear systems analyses (GMTF, GDQE) that include the effect of scatter, magnification, and detector characteristics** [7961-173]
S. K. Gupta, A. Jain, D. R. Bednarek, S. Rudin, Toshiba Stroke Research Ctr., Univ. at Buffalo (United States)

SESSION 25 POSTER SESSION: NOVEL SYSTEMS, OTHER

- 7961 4T **LBP based detection of intestinal motility in WCE images** [7961-174]
G. Gallo, E. Granata, Univ. degli Studi di Catania (Italy)
- 7961 4U **Temperature anomaly detection and estimation using microwave radiometry and anatomical information** [7961-175]
P. Kelly, T. Sobers, B. St. Peter, P. Siqueira, Univ. of Massachusetts Amherst (United States); G. Capraro, Alpert Medical School, Brown Univ. (United States)
- 7961 4V **Optimization of differential phase-contrast imaging setups using simulative approaches** [7961-176]
A. Ritter, P. Bartl, F. Bayer, J. Durst, W. Haas, T. Michel, G. Pelzer, T. Weber, G. Anton, Friedrich-Alexander-Univ. of Erlangen-Nürnberg (Germany)
- 7961 4W **SEM and microCT validation for en face OCT imagistic evaluation of endodontically treated human teeth** [7961-178]
M. L. Negruțiu, L. Nica, C. Sinescu, F. Topală, Univ. of Medicine and Pharmacy Victor Babes (Romania); C. Ioniță, Univ. at Buffalo (United States); A. Bradu, Univ. of Kent (United Kingdom); E. L. Petrescu, D. M. Pop, M. Romînu, Univ. of Medicine and Pharmacy Victor Babes (Romania); A. Gh. Podoleanu, Univ. of Kent (United Kingdom)
- 7961 4X **Performance evaluation of a differential phase-contrast cone-beam (DPC-CBCT) system for soft tissue imaging** [7961-179]
Y. Yu, R. Ning, W. Cai, Univ. of Rochester (United States)
- 7961 4Y **X-ray tube-based phase CT: spectrum polychromatics and imaging performance** [7961-180]
X. Tang, Y. Yang, S. Tang, Emory Univ. School of Medicine (United States)
- 7961 4Z **X-ray phase computed tomography for nanoparticulated imaging probes and therapeutics: preliminary feasibility study** [7961-181]
X. Tang, Y. Yang, S. Tang, Emory Univ. School of Medicine (United States)
- 7961 50 **A new technology for terahertz imaging in breast cancer margin determination** [7961-182]
S. Yngvesson, B. St. Peter, P. Siqueira, P. Kelly, Univ. of Massachusetts Amherst (United States); S. Glück, A. Karellas, Univ. of Massachusetts Medical School (United States)
- 7961 51 **Retaining axial-lateral orthogonality in steered ultrasound data to improve image quality in reconstructed lateral displacement data** [7961-183]
L. Garcia, J. Fromageau, The Institute of Cancer Research and Royal Marsden NHS Trust (United Kingdom); R. J. Housden, G. M. Treece, Univ. of Cambridge (United Kingdom); C. Uff, J. C. Bamber, The Institute of Cancer Research and Royal Marsden NHS Trust (United Kingdom)

- 7961 52 **Simulation of ultrasound backscatter images from fish** [7961-184]
A. H. Pham, B. Stage, Technical Univ. of Denmark (Denmark); M. C. Hemmsen, Technical Univ. of Denmark (Denmark) and BK Medical (Denmark); B. Lundgren, Technical Univ. of Denmark (Denmark); M. M. Pedersen, Technical Univ. of Denmark (Denmark) and Rigshospitalet (Denmark); T. B. Pedersen, Rigshospitalet (Denmark); J. A. Jensen, Technical Univ. of Denmark (Denmark)
- 7961 53 **New method to test the gantry, collimator, and table rotation angles of a linear accelerator used in radiation therapy** [7961-185]
S. Beaumont, T. Torfeh, R. Latreille, QualiFormeD (France); Y. Ben Hdech, QualiFormeD (France) and IRCCyN, CNRS, Univ. de Nantes (France); J. Guedon, IRCCyN, CNRS, Univ. de Nantes (France)

SESSION 26 POSTER SESSION: BREAST IMAGING

- 7961 54 **Factors for conversion between human and automatic read-outs of CDMAM images** [7961-186]
J. Hummel, Medical Univ. of Vienna (Austria) and Wilhelminenspital (Austria); M. Kaar, R. Hoffmann, F. Semturs, N. Brasik, P. Homolka, M. Figl, Medical Univ. of Vienna (Austria)
- 7961 55 **Image noise sensitivity of dual-energy digital mammography for calcification imaging** [7961-187]
X. Chen, Xi'an Jiaotong Univ. (China); R. M. Nishikawa, The Univ. of Chicago (United States); S. Chan, L. Zhang, The Hong Kong Polytechnic Univ. (Hong Kong, China); X. Mou, Xi'an Jiaotong Univ. (China)
- 7961 56 **Abnormal breast tissue imaging based on multi-energy x-ray** [7961-188]
D.-G. Kang, S.-M. Han, Y. Sung, S. Lee, Samsung Electronics Co., Ltd. (Korea, Republic of)
- 7961 57 **High contrast soft tissue imaging based on multi-energy x-ray** [7961-189]
H.-H. Oh, Y.-H. Sung, S.-S. Kim, J.-H. Kwon, S. Lee, C.-Y. Kim, Samsung Electronics Co., Ltd (Korea, Republic of)
- 7961 58 **Detailed characterization of 2D and 3D scatter-to-primary ratios of various breast geometries using a dedicated CT mammatomography system** [7961-190]
J. Shah, J. H. Pachon, P. Madhav, M. P. Tornai, Duke Univ. (United States) and Duke Univ. Medical Ctr. (United States)
- 7961 59 **Characterization of image quality for 3D scatter-corrected breast CT images** [7961-191]
J. H. Pachon, J. Shah, M. P. Tornai, Duke Univ. (United States) and Duke Univ. Medical Ctr. (United States)
- 7961 5A **Evaluation of image quality in computed radiography based mammography systems** [7961-192]
A. Singh, V. Bhwaria, iCR Co, Inc. (United States); D. J. Valentino, iCR Co, Inc. (United States) and Univ. of California, Los Angeles (United States)
- 7961 5C **Application of parameters for evaluating different technologies for digitizing film mammograms** [7961-194]
R. de Freitas Góes, H. Schiabel, M. A. Zucareli Sousa, Univ. of São Paulo (Brazil)

- 7961 5D **Evaluation of the quality of image for various breast composition and exposure conditions in digital mammography** [7961-195]
M. Yamada, Nagoya Univ. (Japan); Y. Kato, Aichi Medical Univ. (Japan); N. Fujita, Nagoya Univ. Hospital (Japan); Y. Koderu, Nagoya Univ. (Japan)
- 7961 5E **Design and validation of a mathematical breast phantom for contrast-enhanced digital mammography** [7961-196]
M. L. Hill, Sunnybrook Research Institute (Canada) and Univ. of Toronto (Canada); J. G. Mainprize, R. A. Jong, Sunnybrook Health Sciences Ctr. (Canada); M. J. Yaffe, Sunnybrook Health Sciences Ctr. (Canada) and Univ. of Toronto (Canada)
- 7961 5F **Automatic patient motion detection in digital breast tomosynthesis** [7961-197]
B. Ren, Y. Zhang, C. Ruth, A. Smith, L. Niklason, Hologic, Inc. (United States); Z. Tao, Hologic/R2 (United States); Z. Jing, Hologic/DRC (United States)
- 7961 5G **A human observer study for evaluation and optimization of reconstruction methods in breast tomosynthesis using clinical cases** [7961-198]
D. Förmvik, Skåne Univ. Hospital (Sweden); A. Jerebko, Siemens Healthcare AG (Germany); P. Timberg, Skåne Univ. Hospital (Sweden); I. Schasiemp, C. Hofmann, Siemens Healthcare AG (Germany); S. Zackrisson, I. Andersson, Skåne Univ. Hospital (Sweden); T. Mertelmeier, Siemens Healthcare AG (Germany); A. Tingberg, Skåne Univ. Hospital (Sweden)
- 7961 5H **Segmentation of adipose and glandular tissue for breast tomosynthesis imaging using a 3D hidden-Markov model trained on breast MRIs** [7961-199]
C. M. Shafer, Duke Univ. (United States); V. L. Seewaldt, Duke Univ. Medical Ctr. (United States); J. Y. Lo, Duke Univ. (United States)
- 7961 5I **Stationary digital breast tomosynthesis with distributed field emission x-ray tube** [7961-200]
F. Sprenger, XinRay Systems LLC (United States); X. Calderon, E. Gidcumb, J. Lu, X. Qian, Univ. of North Carolina at Chapel Hill (United States); D. Spronk, XinRay Systems LLC (United States); A. Tucker, G. Yang, O. Zhou, Univ. of North Carolina at Chapel Hill (United States)
- 7961 5J **The use of detectability indices as a means of automatic exposure control for a digital mammography system (Cum Laude Poster Award)** [7961-201]
E. Salvagnini, UZ Gasthuisberg, Univ. of Leuven (Belgium) and SCK•CEN (Belgium); H. Bosmans, UZ Gasthuisberg, Univ. of Leuven (Belgium); P. Monnin, CHUV, Univ. of Lausanne (Switzerland); L. Struelens, SCK•CEN (Belgium); F. Verdun, CHUV, Univ. of Lausanne (Switzerland); N. W. Marshall, UZ Gasthuisberg, Univ. of Leuven (Belgium)
- 7961 5K **Investigating the potential for super-resolution in digital breast tomosynthesis (Best Student Paper Award)** [7961-202]
R. J. Acciavatti, A. D. A. Maidment, The Univ. of Pennsylvania (United States)

SESSION 27 POSTER SESSION: APPLICATIONS

- 7961 5M **An approach of long-view tomosynthesis in peripheral arterial angiographic examinations** [7961-204]
D. Notohara, K. Nishino, K. Shibata, Shimadzu Corp. (Japan)

- 7961 5N **Accurate joint space quantification in knee osteoarthritis: a digital x-ray tomosynthesis phantom study** [7961-205]
T. S. Sewell, Milwaukee School of Engineering (United States); K. L. Piacsek, B. A. Heckel, J. M. Sabol, GE Healthcare (United States)
- 7961 5O **Image performance evaluation of a 3D surgical imaging platform** [7961-206]
I. E. Petrov, H. N. Nikolov, Robarts Research Institute (Canada); D. W. Holdsworth, M. Drangova, Robarts Research Institute (Canada) and The Univ. of Western Ontario (Canada)
- 7961 5P **Feasibility study of low-dose intra-operative cone-beam CT for image-guided surgery** [7961-207]
X. Han, The Univ. of Chicago (United States); S. Shi, Medtronic, Inc. (United States); J. Bian, The Univ. of Chicago (United States); P. Helm, Medtronic, Inc. (United States); E. Y. Sidky, X. Pan, The Univ. of Chicago (United States)
- 7961 5Q **Examination of the dental cone-beam CT equipped with flat-panel-detector (FPD)** [7961-208]
R. Ito, Nagoya Univ. (Japan); N. Fujita, Nagoya Univ. Hospital (Japan); Y. Koderu, Nagoya Univ. (Japan)
- 7961 5R **Four-dimensional volume-of-interest reconstruction for cone-beam computerized tomography based image-guided radiation therapy of the lung** [7961-209]
M. Ahmad, T. Pan, The Univ. of Texas M.D. Anderson Cancer Ctr. (United States)
- 7961 5S **4D cone beam CT phase sorting using high frequency optical surface measurement during image guided radiotherapy** [7961-210]
G. J. Price, T. E. Marchant, J. M. Parkhurst, P. J. Sharrock, The Christie NHS Foundation Trust (United Kingdom); G. A. Whitfield, The Univ. of Manchester (United Kingdom); C. J. Moore, The Christie NHS Foundation Trust (United Kingdom)
- 7961 5T **Optimization of four-dimensional cone-beam computed tomography in image-guided radiation therapy of the lung** [7961-211]
M. Ahmad, T. Pan, The Univ. of Texas M.D. Anderson Cancer Ctr. (United States)
- 7961 5U **Comparing image quality and radiation dose between new generation MDCT and CBCT systems** [7961-212]
O. Sultan, Technische Univ. München (Germany); M. Fiebich, Univ. of Applied Sciences Giessen-Friedberg (Germany); M. Dobritz, B. Renger, E. J. Rummeny, P. B. Noël, Technische Univ. München (Germany)
- 7961 5V **A comparison of methods for estimating the line spread function of a CT imaging system** [7961-213]
S. Abboud, U.S. Food and Drug Administration (United States), Univ. of Maryland, Baltimore (United States), and Univ. of Maryland, College Park (United States); K. Lee, K. Vinehout, Marquette Univ. (United States); S. Paquerault, U.S. Food and Drug Administration (United States); I. S. Kyprianou, U.S. Food and Drug Administration (United States) and Univ. of Maryland, College Park (United States)

- 7961 5W **Performance evaluation of a sub-millimeter spectrally resolved CT system on pediatric imaging tasks: a simulation** [7961-214]
M. Yveborg, M. E. Danielsson, H. Bornefalk, Royal Institute of Technology (Sweden)
- 7961 5X **Characteristics of noise and resolution on image reconstruction in cone-beam computed tomography** [7961-215]
S.-W. Lee, H.-J. Kim, C.-L. Lee, H.-M. Cho, H.-S. Park, D.-H. Kim, Y.-N. Choi, H.-J. Ryu, Yonsei Univ. (Korea, Republic of)
- 7961 5Y **Investigation of the effect of varying scatter-to-primary ratios on nodule contrast in chest tomosynthesis** [7961-216]
A. Svalkvist, Univ. of Gothenburg (Sweden); G. Ullman, Linköping Univ. (Sweden) and Uppsala Univ. (Sweden); M. Håkansson, Univ. of Gothenburg (Sweden) and Sahlgrenska Univ. Hospital (Sweden); D. R. Dance, Royal Surrey County Hospital (United Kingdom); M. Sandborg, G. Alm Carlsson, Linköping Univ. (Sweden); M. Båth, Univ. of Gothenburg (Sweden) and Sahlgrenska Univ. Hospital (Sweden)
- 7961 5Z **3D lesion insertion in digital breast tomosynthesis images** [7961-217]
M. S. Vaz, Barco, Inc. (United States); Q. Besnehard, C. Marchessoux, Barco NV (Belgium)
- 7961 60 **A patient image-based technique to assess the image quality of clinical chest radiographs** [7961-218]
Y. Lin, E. Samei, Duke Univ. Medical Ctr. (United States); H. Luo, Carestream Health, Inc. (United States); J. T. Dobbins III, H. P. McAdams, Duke Univ. Medical Ctr. (United States); X. Wang, W. J. Sehnert, L. Barski, D. H. Foos, Carestream Health, Inc. (United States)
- 7961 61 **A new iodinated liver phantom for the quantitative evaluation of advanced CT acquisition and reconstruction techniques** [7961-219]
B. Chen, D. Marin, E. Samei, Duke Univ. (United States)

Author Index

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- 1 Keynote and Imaging and Health Economics
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- 2 X-ray Imaging
John A. Rowlands, Thunder Bay Regional Health Sciences Centre (Canada)
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- 3 Metrology
Robert M. Nishikawa, The University of Chicago (United States)
John Yorkston, Carestream Health Technology and Innovation Center (United States)
- 4 Iterative and Statistical Reconstruction
Jinyi Qi, University of California, Davis (United States)
Guang-Hong Chen, University of Wisconsin-Madison (United States)
- 5 Detectors I
John Yorkston, Carestream Health Technology and Innovation Center (United States)
John A. Rowlands, Thunder Bay Regional Health Sciences Centre (Canada)
- 6 Detectors II
Karim S. Karim, University of Waterloo (Canada)
Mats Danielsson, Royal Institute of Technology (Sweden)
- 7 Breast Imaging
Anders Tingberg, Skåne University Hospital, Malmö (Sweden)
Stephen J. Glick, University of Massachusetts Medical School (United States)
- 8 Tomosynthesis I: Reconstruction
John M. Sabol, GE Healthcare (United States)
Michael Grass, Philips Technologie GmbH (Germany)
- 9 Tomosynthesis II
Despina Kontos, The University of Pennsylvania Health System (United States)
Anders Tingberg, Skåne University Hospital, Malmö (Sweden)

- 10 X-ray Imaging: Phase Contrast, Diffraction
Jeffrey H. Siewerdsen, The Johns Hopkins University (United States)
Taly Gilat Schmidt, Marquette University (United States)
- 11 Image Reconstruction
Bruce R. Whiting, Washington University in St. Louis (United States)
Katsuyuki Taguchi, The Johns Hopkins Outpatient Center (United States)
- 12 CT III: Multi-energy
Thomas G. Flohr, Siemens Medical Solutions GmbH (Germany)
John M. Sabol, GE Healthcare (United States)
- 13 Novel Systems
Mats Danielsson, Royal Institute of Technology (Sweden)
Taly Gilat Schmidt, Marquette University (United States)
- 14 CT IV: Cone Beam
Maria Drangova, Robarts Research Institute (Canada)
Marc Kachelriess, Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany)
- 15 Dose
Iacovos S. Kyprianou, U.S. Food and Drug Administration (United States)
Hee-Joung Kim, Yonsei University (Korea, Republic of)
- 16 Special Session I: Dose
Ehsan Samei, Duke University (United States)
Dianna D. Cody, The University of Texas M.D. Anderson Cancer Center (United States)
- 17 Special Session II: Dose
Christoph Hoeschen, Helmholtz Zentrum München GmbH (Germany)
Michael F. McNitt-Gray, University of California, Los Angeles (United States)
- Special Session III: Panel Discussion
Ehsan Samei, Duke University (United States)

