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## SESSION 1  KEYNOTE AND CARDIAC CT

<table>
<thead>
<tr>
<th>Paper Number</th>
<th>Paper Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>9033 03</td>
<td>Simulation evaluation of quantitative myocardial perfusion assessment from cardiac CT [9033-2]</td>
<td>M. Bindschadler, Univ. of Washington (United States); D. Modgil, The Univ. of Chicago (United States); K. R. Branch, Univ. of Washington (United States); P. J. La Riviere, The Univ. of Chicago (United States); A. M. Alessio, Univ. of Washington (United States)</td>
</tr>
<tr>
<td>9033 04</td>
<td>A combined local and global motion estimation and compensation method for cardiac CT [9033-3]</td>
<td>Q. Tang, B. Chiang, Toshiba Medical Research Institute (United States); A. Akinyemi, Toshiba Medical Visualization Systems Europe, Ltd. (United Kingdom); A. Zamyatin, Toshiba Medical Research Institute (United States); B. Shi, Ohio Univ. (United States); S. Nakanishi, Toshiba Medical Research Institute (United States)</td>
</tr>
</tbody>
</table>

## SESSION 2  CT AND APPLICATIONS

<table>
<thead>
<tr>
<th>Paper Number</th>
<th>Paper Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>9033 05</td>
<td>Dose reduction assessment in dynamic CT myocardial perfusion imaging in a porcine balloon-induced-ischemia model [9033-4]</td>
<td>R. Fahmi, B. L. Eck, Case Western Reserve Univ. (United States); M. Vembar, Philips Healthcare (United States); H. G. Bezerra, Univ. Hospitals Case Medical Ctr. (United States); D. L. Wilson, Case Western Reserve Univ. (United States)</td>
</tr>
<tr>
<td>9033 06</td>
<td>Estimating lesion volume in low-dose chest CT: How low can we go? [9033-5]</td>
<td>S. Young, M. F. McNitt-Gray, UCLA Radiological Sciences (United States)</td>
</tr>
<tr>
<td>9033 07</td>
<td>A biological phantom for evaluation of CT image reconstruction algorithms [9033-6]</td>
<td>J. Cammin, G. S. K. Fung, E. K. Fishman, Johns Hopkins Univ. School of Medicine (United States); J. H. Siewerdsen, J. W. Stayman, Johns Hopkins Univ. (United States); K. Taguchi, Johns Hopkins Univ. School of Medicine (United States)</td>
</tr>
<tr>
<td>9033 08</td>
<td>Impact of norm selections on the performance of four-dimensional cone-beam computed tomography (4DCBCT) using PICCS [9033-7]</td>
<td>Y. Li, J. Tang, G.-H. Chen, Univ. of Wisconsin-Madison (United States)</td>
</tr>
<tr>
<td>9033 09</td>
<td>3D image-based scatter estimation and correction for multi-detector CT imaging [9033-8]</td>
<td>M. Petersilka, T. Allmendinger, K. Stierstorfer, Siemens AG (Germany)</td>
</tr>
</tbody>
</table>
A. B. Garson, Washington Univ. in St. Louis (United States); E. W. Izaguirre, Scott and White Healthcare (United States); S. G. Price, Washington Univ. School of Medicine, St. Louis (United States); H. Guan, S. K. Vasireddi, M. A. Anastasio, Washington Univ. in St. Louis (United States)

SESSION 3  PHASE CONTRAST IMAGING

9033 0B  Fast data acquisition method in x-ray differential phase contrast imaging using a new grating design [9033-10]  Y. Ge, K. Li, J. Garrett, G.-H. Chen, Univ. of Wisconsin-Madison (United States)


9033 0D  A multi-channel image reconstruction method for grating-based x-ray phase-contrast computed tomography [9033-12]  Q. Xu, A. Sawatzky, M. A. Anastasio, Washington Univ. in St. Louis (United States)


9033 0F  Cramér-Rao lower bound in differential phase contrast imaging and its application in the optimization of data acquisition systems [9033-14]  Y. Ge, K. Li, G.-H. Chen, Univ. of Wisconsin-Madison (United States)


9033 0H  Depth resolution properties of in-line x-ray phase-contrast tomosynthesis [9033-16]  H. Guan, Q. Xu, A. Garson, M. A. Anastasio, Washington Univ. in St. Louis (United States)

SESSION 4  ALGORITHMS

9033 0J  Removing blooming artifacts with binarized deconvolution in cardiac CT [9033-17]  C. Hofmann, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); M. Knaup, M. Kachelrieß, Deutsches Krebsforschungszentrum (Germany)

9033 0K  Automatic cable artifact removal for cardiac C-arm CT imaging [9033-18]  C. Haase, Philips Healthcare (Germany) and Karlsruher Institut für Technologie (Germany); D. Schäfer, Philips Healthcare (Germany); M. Kim, S. J. Chen, J. Carroll, Univ. of Colorado Denver (United States); P. Eshuis, Philips Healthcare (Netherlands); O. Dössel, Karlsruher Institut für Technologie (Germany); M. Grass, Philips Healthcare (Germany)
Ringing artifact reduction for metallic objects in direct digital radiography detectors with stationary antiscatter grids [9033-19]
D. S. Kim, Hankuk Univ. of Foreign Studies (Korea, Republic of); S. Lee, DRTECH Corp. (Korea, Republic of)

Algorithms for optimizing CT fluence control [9033-20]
S. S. Hsieh, N. J. Pelc, Stanford Univ. (United States)

Towards in-vivo K-edge imaging using a new semi-analytical calibration method [9033-21]
C. Schirra, Philips Research (United States); A. Thran, H. Daerr, E. Roessl, R. Proksa, Philips Research (Germany)

SESSION 5 CT RECONSTRUCTIONS

Regularization design and control of change admission in prior-image-based reconstruction [9033-22]
H. Dang, J. H. Siewerdsen, J. W. Stayman, Johns Hopkins Univ. (United States)

Novel iterative reconstruction method for optimal dose usage in redundant CT-acquisitions [9033-23]
H. Bruder, R. Raupach, T. Allmendinger, S. Kappler, J. Sunnegardh, K. Stierstorfer, T. Flohr, Siemens HealthCare (Germany)

FINESSE: a Fast Iterative Non-linear Exact Sub-space SEarch based algorithm for CT imaging [9033-24]
K. Schmitt, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); Siemens AG (Germany); and The Univ. of Utah (United States); H. Schöndube, K. Stierstorfer, Siemens AG (Germany); J. Hornegger, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); F. Noo, The Univ. of Utah (United States)

A new approach to regularized iterative CT image reconstruction [9033-25]
C. Hofmann, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); M. Knaup, M. Kachelrieß, Deutsches Krebsforschungszentrum (Germany)

A practical statistical polychromatic image reconstruction for computed tomography using spectrum binning [9033-26]
M. Wu, Stanford Univ. (United States); Q. Yang, A. Maier, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); R. Fahrig, Stanford Univ. (United States)

Investigation of an efficient short-scan C-arm reconstruction method with radon-based redundancy handling [9033-27]
F. Dennerlein, H. Kunze, Siemens AG (Germany)

SESSION 6 RECONSTRUCTION

Statistical image reconstruction via denoised ordered-subset statistically penalized algebraic reconstruction technique (DOS-SPART) [9033-28]
Y. Li, K. Niu, J. Tang, G. Chen, Univ. of Wisconsin-Madison (United States)
SESSION 7 CONE BEAM CT AND NOVEL DESIGN

9033 0V Toward a dose reduction strategy using model-based reconstruction with limited-angle tomosynthesis [9033-29]
E. Haneda, J. E. Tkaczyk, GE Global Research Ctr. (United States); G. Palma, R. Iordache, GE Healthcare (France); S. Zelakiewicz, GE Global Research Ctr. (United States); S. Muller, GE Healthcare France (France); B. De Man, GE Global Research Ctr. (United States)

9033 0W Enhancing tissue structures with iterative image reconstruction for digital breast tomosynthesis [9033-30]
E. Y. Sidky, I. S. Reiser, The Univ. of Chicago (United States); R. M. Nishikawa, Univ. of Pittsburgh (United States); X. Pan, The Univ. of Chicago (United States)

9033 0X Estimation of sparse null space functions for compressed sensing in SPECT [9033-31]
J. M. Mukherjee, Univ. of Massachusetts Medical School (United States); E. Sidky, The Univ. of Chicago (United States); M. A. King, Univ. of Massachusetts Medical School (United States)

9033 0Y Whole-body PET parametric imaging employing direct 4D nested reconstruction and a generalized non-linear Patlak model [9033-32]
N. A. Karakatsanis, A. Rahmim, Johns Hopkins Univ. (United States)

SESSION 7 CONE BEAM CT AND NOVEL DESIGN

9033 0Z Rapid scatter estimation for CBCT using the Boltzmann transport equation [9033-33]
M. Sun, Varian Medical Systems, Inc. (United States); A. Maslowski, I. Davis, T. Wareing, G. Failla, Transpire, Inc. (United States); J. Star-Lack, Varian Medical Systems, Inc. (United States)

9033 10 A patient-specific scatter artifacts correction method [9033-34]
W. Zhao, S. Brunner, K. Niu, Univ. of Wisconsin-Madison (United States); S. Schafer, K. Royalty, Siemens Medical Solutions USA, Inc. (United States); G.-H. Chen, Univ. of Wisconsin-Madison (United States)

9033 11 Development and evaluation of a novel designed breast CT system [9033-35]
C. Braun, H. Schlattl, O. Tischenko, Helmholtz Zentrum München GmbH (Germany); O. Dietrich, Ludwig-Maximilians-Univ. Hospital München (Germany); C. Hoeschen, Helmholtz Zentrum München GmbH (Germany)

9033 12 Effective one step-iterative fiducial marker-based compensation for involuntary motion in weight-bearing C-arm cone-beam CT scanning of knees [9033-36]
J.-H. Choi, Stanford Univ. School of Medicine (United States) and Stanford Univ. (United States); A. Maier, M. Berger, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); R. Fahrig, Stanford Univ. School of Medicine (United States)
SESSION 8 TOMOSYNTHESIS

9033 13 Evaluation of low contrast detectability after scatter correction in digital breast tomosynthesis [9033-37]
K. Michielsen, Katholieke Univ. Leuven (Belgium); A. Fieselmann, Siemens Healthcare (Germany); L. Cockmartin, J. Nuyts, Katholieke Univ. Leuven (Belgium)

9033 15 Optimizing the acquisition geometry for digital breast tomosynthesis using the Defrise phantom [9033-39]
R. J. Acciavatti, A. Chang, L. Woodbridge, A. D. A. Maidment, Univ. of Pennsylvania (United States)

9033 16 Increased microcalcification visibility in lumpectomy specimens using a stationary digital breast tomosynthesis system [9033-40]
A. W. Tucker, Y. Z. Lee, C. M. Kuzmiak, J. Calliste, J. Lu, O. Zhou, The Univ. of North Carolina at Chapel Hill (United States)

9033 17 Evaluation of imaging geometry for stationary chest tomosynthesis [9033-41]
J. Shan, A. W. Tucker, Y. Z. Lee, The Univ. of North Carolina at Chapel Hill (United States); M. D. Heath, X. Wang, D. Foos, Carestream Health, Inc. (United States); J. Lu, O. Zhou, The Univ. of North Carolina at Chapel Hill (United States)

SESSION 9 MULTI-ENERGY CT

9033 18 CT calibration and dose minimization in image-based material decomposition with energy-selective detectors [9033-42]
S. Faby, Deutsches Krebsforschungszentrum (Germany); S. Kuchenbecker, Deutsches Krebsforschungszentrum (Germany) and Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); D. Simons, H.-P. Schlemmer, Deutsches Krebsforschungszentrum (Germany); M. Leil, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); M. Kachelrieß, Deutsches Krebsforschungszentrum (Germany) and Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany)

9033 19 Segmented targeted least squares estimator for material decomposition in multi-bin PCXDs [9033-43]
P. L. Rajbhandary, S. S. Hsieh, N. J. Pelc, Stanford Univ. (United States)

9033 1A Pooling optimal combinations of energy thresholds in spectroscopic CT [9033-44]
T. Koenig, M. Zuber, E. Hamann, Karlsruher Institut für Technologie (Germany); A. Runz, Deutsches Krebsforschungszentrum (Germany); M. Fiederle, Karlsruher Institut für Technologie (Germany) and Univ. Freiburg (Germany); T. Baumbach, Karlsruher Institut für Technologie (Germany)

9033 1B Effects of energy-bin acquisition methods on noise properties in photon-counting spectral CT [9033-45]
T. Gilat Schmidt, K. C. Zimmerman, Marquette Univ. (United States); E. Y. Sidky, The Univ. of Chicago (United States)
SESSION 10  MULTI-ENERGY IMAGING AND DETECTORS

9033 1C  Photon counting CT at elevated x-ray tube currents: contrast stability, image noise and multi-energy performance [9033-46]
S. Kappler, A. Henning, B. Kreisler, F. Schöeck, K. Stierstorfer, Siemens Healthcare (Germany); T. Flohr, Siemens Healthcare (Germany) and Eberhard-Karls Univ. (Germany)

9033 1D  Direct spectral recovery using x-ray fluorescence measurements for material decomposition applications using photon counting spectral x-ray detectors [9033-47]
T. Campbell-Ricketts, M. Das, Univ. of Houston (United States)

SESSION 10  MULTI-ENERGY IMAGING AND DETECTORS

9033 1E  Energy weighting improves the image quality of spectral mammograms: Implementation on a photon-counting mammography system [9033-48]
J. Berglund, H. Johansson, H.-I. Maack, E. Fredenberg, Philips Healthcare (Sweden)

9033 1F  Spectral lesion characterization on a photon-counting mammography system [9033-49]
K. Erhard, Philips Research (Germany); E. Fredenberg, Philips Healthcare (Sweden); H. Homann, E. Roessl, Philips Research (Germany)

9033 1G  Amorphous selenium direct detection CMOS digital x-ray imager with 25 micron pixel pitch [9033-50]
C. C. Scott, S. Abbaszadeh, S. Ghanbarzadeh, Univ. of Waterloo (Canada); G. Allan, M. Farrier, Teledyne DALSA Inc. (Canada); I. A. Cunningham, Robarts Research Institute (Canada), Lawson Health Research Institute (Canada), and Univ. of Western Ontario (Canada); K. S. Karim, Univ. of Waterloo (Canada)

9033 1H  Reflection properties of scintillator-septum candidates for a pixelated MeV detector [9033-51]
M. Shin, Stanford Univ. (United States); J. Star-Lack, Varian Medical Systems, Inc. (United States); M. Janecek, Rapiscan Labs, Inc. (United States); E. Abel, D. Shedlock, Varian Medical Systems, Inc. (United States); R. Fahrig, Stanford Univ. (United States)

9033 1I  Initial steps toward the realization of large area arrays of single photon counting pixels based on polycrystalline silicon TFTs [9033-52]
A. K. Liang, M. Koniczek, L. E. Antonuk, Y. El-Mohri, Q. Zhao, H. Jiang, Univ. of Michigan (United States); R. A. Street, J. P. Lu, Palo Alto Research Ctr. (United States)

SESSION 11  NEW CONTRAST MECHANISMS

9033 1J  X-ray fluorescence molecular imaging of high-Z tracers: investigation of a novel analyzer based setup [9033-53]
B. H. Müller, Ludwig-Maximilians-Univ. München (Germany) and Helmholtz Zentrum München GmbH (Germany); C. Hoeschen, Helmholtz Zentrum München GmbH (Germany); F. Grüner, Univ. Hamburg (Germany); T. R. C. Johnson, Ludwig-Maximilians-Univ. München (Germany)
Monte Carlo simulations of dose enhancement around gold nanoparticles used as x-ray imaging contrast agents and radiosensitizers [9033-54]
W. B. Li, M. Müllner, M. B. Greiter, Helmholtz Zentrum München GmbH (Germany); C. Bissardon, Helmholtz Zentrum München GmbH (Germany) and Claude Bernard Univ. Lyon 1 (France); W. Z. Xie, Helmholtz Zentrum München GmbH (Germany) and Tsinghua Univ. (China); H. Schlatll, U. Oeh, Helmholtz Zentrum München GmbH (Germany); J. L. Li, Tsinghua Univ. (China); C. Hoeschen, Helmholtz Zentrum München GmbH (Germany)

Small-animal microangiography using phase-contrast x-ray imaging and gas as contrast agent [9033-55]
U. Lundström, D. H. Larsson, KTH Royal Institute of Technology (Sweden); U. K. Westermark, Karolinska Institutet (Sweden); A. Burvall, H. M. Hertz, KTH Royal Institute of Technology (Sweden)

Small-animal dark-field radiography for pulmonary emphysema evaluation [9033-56]
A. Yaroshenko, Technische Univ. München (Germany); F. G. Meinel, K. Hellbach, Ludwig-Maximilians-Univ. Hospital München (Germany); M. Bech, Technische Univ. München (Germany) and Lund Univ. (Sweden); A. Velroyen, M. Müller, Technische Univ. München (Germany); F. Bamberg, K. Nikolaou, M. F. Reiser, Ludwig-Maximilians-Univ. Hospital München (Germany); A. Ö. Yildirim, O. Eickelberg, Helmholtz Zentrum München GmbH (Germany); F. Pfeiffer, Technische Univ. München (Germany)

Compton coincidence volumetric imaging: a new x-ray volumetric imaging modality based on Compton scattering [9033-57]
X. Xu, Beaumont Health Systems (United States)

Apparatus and fast method for cancer cell classification based on high harmonic coherent diffraction imaging in reflection geometry (Best Student Paper) [9033-58]
M. Zürch, Friedrich-Schiller-Univ. Jena (Germany); S. Foertsch, Siemens AG (Germany) and Friedrich-Alexander-Univ. Erlangen (Germany); M. Matzas, Siemens AG (Germany); K. Pachmann, Univ. Hospital Jena (Germany) and Ctr. for Transfusion Medicine (Germany); R. Kuth, Siemens AG (Germany); C. Spielmann, Friedrich-Schiller-Univ. Jena (Germany) and Helmholtz-Institut Jena (Germany)

Patient-specific minimum-dose imaging protocols for statistical image reconstruction in C-arm cone-beam CT using correlated noise injection [9033-59]

Prospective optimization of CT under tube current modulation: I. organ dose [9033-60]
X. Tian, Duke Univ. (United States) (United States); X. Li, Cleveland State Univ. (United States); W. Segars, D. Frush, E. Samei, Duke Univ. (United States)

Size-specific dose estimates (SSDE) for a prototype orthopedic cone-beam CT system [9033-62]
S. Richard, N. Packard, J. Yorkston, Carestream Health, Inc. (United States)
SESSION 13  PHANTOMS

9033 1T Monte Carlo investigation of backscatter factors for skin dose determination in interventional neuroradiology procedures [9033-63]
A. Omar, Karolinska Univ. Hospital (Sweden); H. Benmakhlouf, Karolinska Univ. Hospital (Sweden) and Univ. of Stockholm (Sweden); M. Marteinsdottir, R. Bujila, P. Nowik, Karolinska Univ. Hospital (Sweden); P. Andreo, Univ. of Stockholm (Sweden)

9033 1U Design of anthropomorphic textured phantoms for CT performance evaluation [9033-64]
J. Solomon, Duke Univ. (United States); F. Bochud, Lausanne Univ. Hospital (Switzerland); E. Samei, Duke Univ. (United States)

9033 1V The development of a population of 4D pediatric XCAT phantoms for CT imaging research and optimization [9033-65]
H. Norris, Y. Zhang, J. Frush, G. M. Sturgeon, A. Minhas, Duke Univ. (United States); D. J. Tward, J. T. Ratnahanther, M. I. Miller, Johns Hopkins Univ. (United States); D. Frush, E. Samei, W. P. Segars, Duke Univ. (United States)

9033 1W Construction of anthropomorphic hybrid dual-lattice voxel models for optimizing image quality and dose in radiography [9033-66]
N. Petoussi-Henss, J. Becker, M. Greiter, H. Schlattl, M. Zankl, C. Hoeschen, Helmholtz Zentrum München GmbH (Germany)

9033 1X Population of 100 realistic patient-based computerized breast phantoms for multi-modality imaging research [9033-67]
W. P. Segars, Duke Univ. (United States); A. I. Veress, Univ. of Washington (United States); J. R. Wells, G. M. Sturgeon, N. Kiarashi, J. Y. Lo, E. Samei, J. T. Dobbins III, Duke Univ. (United States)

Part Two

9033 1Y A second generation of physical anthropomorphic 3D breast phantoms based on human subject data [9033-68]
A. Nolte, N. Kiarashi, E. Samei, W. P. Segars, J. Y. Lo, Duke Univ. (United States)

9033 1Z Automatic insertion of simulated microcalcification clusters in a software breast phantom [9033-69]
V. Shankla, Univ. of Pennsylvania (United States); D. D. Pokrajac, Delaware State Univ. (United States); S. P. Weinstein, M. DeLeo, C. Tuite, R. Roth, E. F. Conant, A. D. A. Maidment, P. R. Bakic, Univ. of Pennsylvania (United States)

SESSION 14  METROLOGY AND SYSTEM CHARACTERIZATION

9033 20 Cascaded systems modeling of signal, noise, and DQE for x-ray photon counting detectors (Best Student Paper) [9033-70]
J. Xu, W. Zbijewski, G. Gang, J. W. Stayman, K. Taguchi, Johns Hopkins Univ. (United States); M. Lundqvist, E. Fredenberg, Philips Women's Healthcare (Sweden); J. A. Carrino, J. H. Siewerdsen, Johns Hopkins Univ. (United States)
Detector system comparison using relative CNR for specific imaging tasks related to neuro-endovascular image-guided interventions (neuro-EIGIs) [9033-71]
B. Loughran, S. N. Swetadri Vasan, V. Singh, C. N. Ionita, A. Jain, D. R. Bednarek, S. Rudin, Toshiba Stroke and Vascular Research Ctr., Univ. at Buffalo (United States)

Method for measuring the intensity profile of a CT fan-beam filter [9033-72]
B. R. Whiting, Univ. of Pittsburgh (United States); A. Dohatcu, Univ. of Pittsburgh Medical Ctr. (United States)

Prospective optimization of CT under tube current modulation: II. image quality [9033-73]
X. Tian, J. Wilson, D. Frush, E. Samei, Duke Univ. (United States)

A task-based comparison of two reconstruction algorithms for digital breast tomosynthesis [9033-74]
R. Mahadevan, L. C. Ikejimba, Y. Lin, E. Samei, J. Y. Lo, Duke Univ. (United States)

SESSION 15 PERFORMANCE EVALUATION

A refined methodology for modeling volume quantification performance in CT [9033-75]
B. Chen, J. Wilson, E. Samei, Duke Univ. (United States)

Internal noise in channelized Hotelling observer (CHO) study of detectability index-differential phase contrast CT vs. conventional CT [9033-76]
X. Tang, Y. Yang, Emory Univ. School of Medicine (United States)

Towards continualized task-based resolution modeling in PET imaging [9033-77]
S. Ashrafinia, N. Karakatsanis, H. Mohy-ud-Din, A. Rahmim, Johns Hopkins Univ. (United States)

CT x-ray tube voltage optimisation and image reconstruction evaluation using visual grading analysis [9033-78]
X. Zheng, T. M. Kim, R. Davidson, Charles Sturt Univ. (Australia); S. Lee, C. Shin, Seoul National Univ. Hospital (Korea, Republic of); S. Yang, Dongshin Univ. (Korea, Republic of)

High-performance soft-tissue imaging in extremity cone-beam CT [9033-79]
W. Zbijewski, A. Sisniega, J. W. Stayman, A. Muhit, G. Thawail, Johns Hopkins Univ. (United States); N. Packard, S. Yang, J. Yorkston, Carestream Health, Inc. (United States); J. A. Carrino, J. H. Siewerdsen, Johns Hopkins Univ. (United States)

Analyzing the performance of ultrasonic B-mode imaging for breast lesion diagnosis [9033-80]
S. Bahramian, Beckman Institute, Univ. of Illinois at Urbana-Champaign (United States); C. K. Abbey, Univ. of California, Santa Barbara (United States); M. F. Insana, Beckman Institute, Univ. of Illinois at Urbana-Champaign (United States)
9033 2B  Investigation of the potential causes of partial scan artifacts in dynamic CT myocardial perfusion imaging [9033-81]
Y. Tao, M. Speidel, T. Szczykutowicz, G.-H. Chen, Univ. of Wisconsin-Madison (United States)

9033 2C  Quantification of microarchitectural anisotropy in bone with diffraction enhanced imaging [9033-82]
D. M. Connor Jr., M. Mehrotra, A. C. LaRue, Medical Univ. of South Carolina (United States)

9033 2D  Assessment of phase based dose modulation for improved dose efficiency in cardiac CT on an anthropomorphic motion phantom [9033-83]
A. Budde, R. Nilsen, B. Nett, GE Healthcare (United States)

9033 2E  Image registration for motion estimation in cardiac CT [9033-84]
B. Shi, Ohio Univ. (United States); G. Katsevich, Princeton Univ. (United States); B. S. Chiang, Toshiba Medical Research Institute (United States); A. Katsevich, Univ. of Central Florida (United States); A. Zamyatin, Toshiba Medical Research Institute (United States)

9033 2F  A novel Region of Interest (ROI) imaging technique for biplane imaging in interventional suites: high-resolution small field-of-view imaging in the frontal plane and dose-reduced, large field-of-view standard-resolution imaging in the lateral plane [9033-85]
S. N. Swetadri Vasan, Univ. at Buffalo (United States) and Toshiba Stroke and Vascular Research Ctr., Univ. at Buffalo (United States); C. Ionita, D. R. Bednarek, Toshiba Stroke and Vascular Research Ctr., Univ. at Buffalo (United States); S. Rudin, Univ. at Buffalo (United States) and Toshiba Stroke and Vascular Research Ctr., Univ. at Buffalo (United States)

9033 2G  Quantitative analysis of artifacts in 4D DSA: The relative contributions of beam hardening and scatter to vessel dropout behind highly attenuating structures [9033-86]
J. Hermus, T. P. Szczykutowicz, C. M. Strother, C. Mistretta, Univ. of Wisconsin-Madison (United States)

9033 2H  Calibration-free coronary artery measurements for interventional device sizing using inverse geometry x-ray fluoroscopy: in vivo validation [9033-87]
M. T. Tomkowiak, A. N. Raval, M. S. Van Lysel, Univ. of Wisconsin-Madison (United States); T. Funk, Triple Ring Technologies, Inc. (United States); M. A. Speidel, Univ. of Wisconsin-Madison (United States)

9033 2I  Necessary forward model specification accuracy for basis material decomposition in spectral CT [9033-88]
H. Bornefalk, M. Persson, M. Danielsson, KTH Royal Institute of Technology (Sweden)

9033 2J  A study of the x-ray image quality improvement in the examination of the respiratory system based on the new image processing technique [9033-90]
Y. Nagai, M. Kitagawa, J. Torii, T. Iwase, T. Aso, K. Ihara, National Cancer Ctr. Hospital (Japan); M. Fujikawa, Y. Takeuchi, K. Suzuki, T. Ishiguro, A. Harada, Hitachi Medical Corp. (Japan)

9033 2K  Relaxation times estimation in MRI [9033-91]
F. Baselice, Univ. degli Studi di Napoli Parthenope (Italy); R. Caivano, A. Cammarota, IRCCS CROB (Italy); G. Ferraioli, V. Pascazio, Univ. degli Studi di Napoli Parthenope (Italy)
Comparison of the effect of simple and complex acquisition trajectories on the 2D SPR and 3D voxelized differences for dedicated breast CT imaging
J. P. Shah, Duke Univ. (United States) and Duke Univ. Medical Ctr. (United States); S. D. Mann, Duke Univ. Medical Ctr. (United States); R. L. McKinley, ZumaTek, Inc. (United States); M. P. Tornai, Duke Univ. (United States) and Duke Univ. Medical Ctr. (United States)

C-arm perfusion imaging with a fast penalized maximum-likelihood approach
R. Frysch, T. Pfeiffer, S. Bannasch, Otto-von-Guericke-Univ. Magdeburg (Germany); S. Serowy, Univ. Medical Ctr. Magdeburg (Germany); S. Gugel, Otto-von-Guericke-Univ. Magdeburg (Germany); M. Skalej, Univ. Medical Ctr. Magdeburg (Germany); G. Rose, Otto-von-Guericke-Univ. Magdeburg (Germany)

Simultaneous motion estimation and image reconstruction (SMEIR) for 4D cone-beam CT
J. Wang, X. Gu, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States)

Three-dimensional image guided extrapolation for cone-beam CT image reconstruction
B. Nett, GE Healthcare (United States)

Anti-scatter grid evaluation for wide-cone CT
R. Melnyk, J. Boudry, GE Healthcare (United States); X. Liu, Missouri Univ. of Science and Technology (United States); M. Adamak, GE Healthcare (United States)

Variance-based iterative image reconstruction from few views in limited-angle C-arm computed tomography
W. El Hakimi, G. Sakas, Technische Univ. Darmstadt (Germany)

An experimental study on the noise correlation properties of CBCT projection data
H. Zhang, Southern Medical Univ. (China) and The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); L. Ouyang, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); J. Ma, J. Huang, W. Chen, Southern Medical Univ. (China); J. Wang, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States)

A sinogram based technique for image correction and removal of metal clip artifacts in cone beam breast CT
T. Wang, Y. Shen, Y. Zhong, C.-J. Lai, The Univ. of Texas M.D. Anderson Cancer Ctr. (United States); J. Wang, First Affiliated Hospital of Xinjiang Medical Univ. (China); C. C. Shaw, The Univ. of Texas M.D. Anderson Cancer Ctr. (United States)

Preliminary study of region-of-interest image reconstruction with intensity weighting in cone-beam CT using iterative algorithm
K. Son, Korea Advanced Institute of Science and Technology (Korea, Republic of) and Sungkyunkwan Univ. School of Medicine (Korea, Republic of); J. Lee, Y. Lee, J. S. Kim, S. Cho, Korea Advanced Institute of Science and Technology (Korea, Republic of)
POSTER SESSION: CONVENTIONAL CT

9033 2V  Reduction of metal artifacts: beam hardening and photon starvation effects [9033-102]  
G. K. Yadava, D. Pal, J. Hsieh, GE Healthcare (United States)

9033 2W  Acquiring tomographic images from panoramic x-ray scanners [9033-103]  
V.-G. Nguyen, Le Quy Don Technical Univ. (Viet Nam); S.-J. Lee, Paichai Univ (Korea, Republic of)

9033 2X  Impact of redundant ray weighting on motion artifact in a statistical iterative reconstruction framework [9033-104]  
Y. Tao, J. Tang, M. Speidel, G.-H. Chen, Univ. of Wisconsin-Madison (United States)

9033 2Y  Effective noise reduction and equalization in projection domain [9033-105]  
Z. Yang, A. A. Zamyatin, S. Nakanishi, Toshiba Medical Research Institute (United States)

9033 2Z  X-ray pulsing methods for reduced-dose computed tomography in PET/CT attenuation correction [9033-106]  
U. Wiedmann, V. B. Neculaes, D. Harrison, E. Asma, GE Global Research Ctr. (United States); P. E. Kinahan, Univ. of Washington (United States); B. De Man, GE Global Research Ctr. (United States)

9033 30  Dose, noise and view weights in CT helical scans [9033-107]  
G. Cao, E. Chino, R. Nilsen, J. Hsieh, GE Healthcare (United States)

9033 31  Volume estimation of multi-density nodules with thoracic CT [9033-108]  
M. A. Gavrielides, Q. Li, R. Zeng, K. J. Myers, B. Sahiner, N. Petrick, U.S. Food and Drug Administration (United States)

POSTER SESSION: CT RECONSTRUCTION

9033 32  Accelerating ordered-subsets x-ray CT image reconstruction using the linearized augmented Lagrangian framework [9033-109]  
H. Nien, J. A. Fessler, Univ. of Michigan (United States)

9033 33  Sinogram rebinning and frequency boosting for high resolution iterative CT reconstruction with focal spot deflection [9033-110]  
J. Wang, Y. Long, L. Fu, X. Rui, GE Global Research Ctr. (United States); E. A. Kazerooni, Univ. of Michigan Hospital (United States); B. De Man, GE Global Research Ctr. (United States)

9033 34  A multi-resolution approach to retrospectively gated cardiac micro-CT reconstruction [9033-111]  
D. P. Clark, G. A. Johnson, C. T. Badea, Duke Univ. Medical Ctr. (United States)

9033 35  Generalized least-squares CT reconstruction with detector blur and correlated noise models [9033-112]  
J. W. Stayman, W. Zbijewski, S. Tilley II, J. Siewerdsen, Johns Hopkins Univ. (United States)
LBP-based penalized weighted least-squares approach to low-dose cone-beam computed tomography reconstruction [9033-113]
M. Ma, H. Wang, Y. Liu, H. Zhang, X. Gu, Z. Liang, Stony Brook Univ. (United States)

Nonlocal means-based regularizations for statistical CT reconstruction [9033-114]
H. Zhang, Stony Brook Univ. (United States); J. Ma, Stony Brook Univ. (United States) and Southern Medical Univ. (China); Y. Liu, H. Han, Stony Brook Univ. (United States); L. Li, CUNY, College of Staten Island (United States); J. Wang, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); Z. Liang, Stony Brook Univ. (United States)

Low-dose CT reconstruction with patch based sparsity and similarity constraints [9033-115]
Q. Xu, X. Mou, Xi’an Jiaotong Univ. (China)

Noise study on cone-beam CT FDK image reconstruction by improved area-simulating-volume technique [9033-116]
Y. Liu, Stony Brook Univ. (United States); J. Wang, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); H. Zhang, Y. Fan, Z. Liang, Stony Brook Univ. (United States)

Mojette tomographic reconstruction for micro-CT: a bone and vessels quality evaluation [9033-117]
H. Der Sarkissian, LUNAM Univ., Univ. de Nantes, IRCCyN, CNRS (France) and KEOSYS (France); B. Recur, Australian National Univ. (Australia); J. Guédon, LUNAM Univ., Univ. de Nantes, IRCCyN, CNRS (France); P. Bléry, LUNAM Univ., Univ. de Nantes, IRCCyN, CNRS (France) and ILOAD INSERM (France); P. Pilet, LUNAM Univ., Univ. de Nantes, ILOAD INSERM (France); Y. Amouriq, LUNAM Univ., Univ. de Nantes, IRCCyN, CNRS (France) and ILOAD INSERM (France)

Two-step iterative reconstruction of region-of-interest with truncated projection in computed tomography [9033-118]
K. Yamakawa, S. Kojima, Hitachi, Ltd. (Japan)

Multigrid iterative method with adaptive spatial support for computed tomography reconstruction from few-view data [9033-119]
P.-C. Lee, Industrial Technology Research Institute (Taiwan)

Iterative raw measurements restoration method with penalized weighted least squares approach for low-dose CT [9033-120]
H. Takahashi, T. Goto, K. Hirokawa, O. Miyazaki, Hitachi Medical Corp. (Japan)

Use of depth information from in-depth photon counting detectors for x-ray spectral imaging: a preliminary simulation study [9033-121]
Y. Yao, Stanford Univ. (United States); H. Bornefalk, KTH Royal Institute of Technology (Sweden); S. S. Hsieh, Stanford Univ. (United States); M. Danielsson, KTH Royal Institute of Technology (Sweden); N. J. Pelc, Stanford Univ. (United States)

Fast model-based restoration of noisy and undersampled spectral CT data [9033-122]
D. Rigie, P. J. La Riviere, Univ. of Chicago (United States)
9033 3G Experimental study of two material decomposition methods using multi-bin photon counting detectors [9033-123]
K. C. Zimmerman, Marquette Univ. (United States); E. Y. Sidky, Univ. of Chicago (United States); T. Gilat Schmidt, Marquette Univ. (United States)

9033 3H Prostate tissue decomposition via DECT using the model based iterative image reconstruction algorithm DIRA [9033-124]
A. Malusek, M. Magnusson, M. Sandborg, R. Westin, G. Alm Carlsson, Linköping Univ. (Sweden)

9033 3I Investigation of the polynomial approach for material decomposition in spectral x-ray tomography using an energy-resolved detector [9033-125]
A. Potop, CEA-LETI (France) and CREATIS, CNRS, Univ. de Lyon (France); V. Rebuffel, J. Rinkel, A. Brambilla, CEA-LETI (France); F. Peyrin, CREATIS, CNRS, Univ. de Lyon (France); L. Verger, CEA-LETI (France)

9033 3J Enabling photon counting detectors with dynamic attenuators [9033-126]
S. S. Hsieh, N. J. Pelc, Stanford Univ. (United States)

9033 3K Noise balance in pre-reconstruction decomposition in spectral CT [9033-127]
X. Wang, Y. Zou, Toshiba Medical Research Institute (United States)

9033 3L Energy-resolved CT imaging with a photon-counting silicon-strip detector [9033-128]
M. Persson, B. Huber, S. Karlsson, X. Liu, H. Chen, C. Xu, M. Yveborg, H. Bornefalk, M. Danielsson, KTH Royal Institute of Technology (Sweden)

POSTER SESSION: DETECTORS

9033 3M Characterization of a hybrid energy-resolving photon-counting detector [9033-129]
A. Zang, G. Peizler, G. Anton, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); R. Ballabriga Sune, CERN (Switzerland); F. Bisello, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany) and IBA Dosimetry GmbH (Germany); M. Campbell, CERN (Switzerland); A. Fauler, M. Fiederle, FMF-Freiburger Materialforschungszentrum (Germany); X. Llopart Cudie, CERN (Switzerland); L. Michel, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany)

9033 3N X-ray light valve (XLV): a novel detectors’ technology for digital mammography [9033-130]
S. Marcovici, V. Sukhovatkin, P. Oakham, XLV Diagnostics, Inc. (Canada)

9033 3O Characterization of a silicon strip detector for photon-counting spectral CT using monoenergetic photons from 40 keV to 120 keV [9033-131]
X. Liu, H. Bornefalk, H. Chen, M. Danielsson, S. Karlsson, M. Persson, C. Xu, B. Huber, KTH Royal Institute of Technology (Sweden)

9033 3P Experimental and theoretical performance analysis for a CMOS-based high resolution image detector [9033-132]
A. Jain, D. R. Bednarek, S. Rudin, Toshiba Stroke and Vascular Research Ctr., Univ. at Buffalo (United States)
Part Three

9033 3Q  Measurement of imaging properties of scintillating fiber optic plate [9033-133]

9033 3R  Optimizing two radioluminescence based quality assurance devices for diagnostic radiology utilizing a simple model [9033-134]
J. Lindström, Karolinska Univ. Hospital (Sweden) and Linköping Univ. (Sweden); M. Hulthén, Karolinska Univ. Hospital (Sweden); G. Alm Carlsson, M. Sandborg, Linköping Univ. (Sweden)

9033 3S  Investigation of spatial resolution and temporal performance of SAPHIRE (scintillator avalanche photoconductor with high resolution emitter readout) with integrated electrostatic focusing [9033-135]
D. A. Scaduto, A. R. Lubinsky, J. A. Rowlands, Stony Brook Univ. (United States); H. Kenmotsu, N. Nishimoto, T. Nishino, NanoX Japan (Japan); K. Tanioka, Tokyo Denki Univ. (Japan); W. Zhao, Stony Brook Univ. (United States)

9033 3T  Imaging performance of a thin Lu₂O₃:Eu nanophosphor scintillating screen coupled to a high resolution CMOS sensor under x-ray radiographic conditions: comparison with Gd₂O₂S:Eu conventional phosphor screen [9033-136]
I. Seferis, Wroclaw Univ. (Poland) and Univ. of Patras (Greece); C. Michail, I. Valais, Technological Educational Institute of Athens (Greece); J. Zeler, Wroclaw Univ. (Poland); P. Liaparinos, N. Kalyvas, G. Fountos, Technological Educational Institute of Athens (Greece); E. Zych, Wroclaw Univ. (Poland); I. Kandarakis, Technological Educational Institute of Athens (Greece); G. Panayiotakis, Univ. of Patras (Greece)

9033 3U  Physical properties of a new flat panel detector with irradiated side sampling (ISS) technology [9033-137]
M. Fiebich, J. M. Burg, C. Piel, Technische Hochschule Mittelhessen (Germany); L. Rodenheber, Justus Liebig Univ. Giessen (Germany); P. Penchev, Technische Hochschule Mittelhessen (Germany); G. A. Krombach, Justus Liebig Univ. Giessen (Germany)

9033 3V  MTF characterization in 2D and 3D for a high resolution large field of view flat panel imager for cone beam CT [9033-138]
J. P. Shah, Duke Univ. (United States) and Duke Univ. Medical Ctr. (United States); S. D. Mann, Duke Univ. Medical Ctr. (United States); M. P. Tornai, Duke Univ. (United States) and Duke Univ. Medical Ctr. (United States); M. Richmond, G. Zentai, Varian Medical Systems, Inc. (United States)

9033 3W  Comparing analytical and Monte Carlo optical diffusion models in phosphor-based x-ray detectors [9033-139]
N. Kalyvas, P. Liaparinos, Technological Educational Institute of Athens (Greece)
POSTER SESSION: DOSE

9033 3Y  Radio-fluorogenic dosimetry with violet diode laser-induced fluorescence [9033-142]
P. Sandwall, H. Spitz, H. Elson, M. Lamba, W. Connick, H. Fenichel, Univ. of Cincinnati (United States)

9033 3Z  Comparison of different approaches of estimating effective dose from reported exposure data in 3D imaging with interventional fluoroscopy systems [9033-143]
A. Svalkvist, J. Hansson, M. Båth, Univ. of Gothenburg (Sweden) and Sahlgrenska Univ. Hospital (Sweden)

9033 40  Improved-resolution real-time skin-dose mapping for interventional fluoroscopic procedures [9033-144]
V. K. Rana, S. Rudin, D. R. Bednarek, Toshiba Stroke and Vascular Research Ctr., Univ. at Buffalo (United States)

9033 41  Beam hardening and partial beam hardening of the bowtie filter: effects on dosimetric applications in CT [9033-145]
X. Lopez-Rendon, Katholieke Univ. Leuven (Belgium); G. Zhang, Mayo Clinic (United States); H. Bosmans, R. Oyen, F. Zanca, Katholieke Univ. Leuven (Belgium)

9033 42  CT-guided brachytherapy of prostate cancer: reduction of effective dose from x-ray examination [9033-146]
D. B. Sanin, Medical Radiological Research Ctr. (Russian Federation) and Ctr. of Brachytherapy of Prostate Cancer (Russian Federation); V. A. Biryukov, S. S. Rusetskiy, Medical Radiological Research Ctr. (Russian Federation); P. V. Sviridov, T. V. Valodina, Ctr. of Brachytherapy of Prostate Cancer (Russian Federation)

POSTER SESSION: MAMMOGRAPHY

9033 43  X-ray scatter characterization in dedicated breast CT with bowtie filters [9033-147]
K. Kontson, R. J. Jennings, U.S. Food and Drug Administration (United States) and Univ. of Maryland (United States)

9033 44  A simple scatter correction method for dual energy contrast-enhanced digital breast tomosynthesis [9033-148]
Y. Lu, B. Lau, Y.-H. Hu, W. Zhao, G. Gindi, Stony Brook Univ. (United States)

9033 45  Development of mammography system using CdTe photon counting detector for the exposure dose reduction [9033-149]
S. Maruyama, N. Niwa, M. Yamazaki, Nagoya Univ. (Japan); T. Yamakawa, T. Nagano, Telesystems Co. (Japan); Y. Kodera, Nagoya Univ. (Japan)

9033 46  On imaging with or without grid in digital mammography [9033-150]
H. Chen, M. Danielsson, B. Cederström, KTH Royal Institute of Technology (Sweden)

9033 47  Estimation of effective x-ray tissue attenuation differences for volumetric breast density measurement [9033-151]
B. Chen, C. Ruth, Z. Jing, B. Ren, A. Smith, A. Kshirsagar, Hologic, Inc. (United States)
Improving the spatial resolution characteristics of dedicated cone-beam breast CT technology [9033-152]
P. Gazi, J. M. Boone, Univ. of California Davis (United States)

Spectrum optimization for computed radiography systems [9033-153]
J. Hummel, Medizinische Univ. Wien (Austria) and Wilhelmenspital (Austria); F. Semturs, M. Kaar, P. Homolka, M. Figl, Medizinische Univ. Wien (Austria)

POSTER SESSION: NEW IMAGING CONCEPTS

Feasibility study of spectral computed tomography (CT) with gold as a new contrast agent (Best Student Paper) [9033-155]
M. Müllner, H. Schlatat, U. Oeh, C. Hoeschen, Helmholtz Zentrum München GmbH (Germany); O. Dietrich, Ludwig-Maximilians-Univ. Hospital München (Germany)

Projection-based energy weighting on photon-counting x-ray images in digital subtraction mammography: a feasibility study [9033-156]
S.-H. Choi, S.-W. Lee, Y.-N. Choi, Y.-J. Lee, H.-J. Kim, Yonsei Univ. (Korea, Republic of)

High resolution x-ray fluorescence imaging for a microbeam radiation therapy treatment planning system [9033-157]
P. Chtcheprov, C. Inscoe, L. Burk, R. Ger, H. Yuan, J. Lu, The Univ. of North Carolina at Chapel Hill (United States); S. Chang, O. Zhou, The Univ. of North Carolina at Chapel Hill (United States) and UNC Lineberger Comprehensive Cancer Ctr. (United States)

Development of an MRI fiducial marker prototype for automated MR-US fusion of abdominal images [9033-158]
C. P. Favazza, K. R. Gorny, Mayo Clinic (United States); M. J. Washburn, GE Healthcare (United States); N. J. Hangiandreou, Mayo Clinic (United States)

Comparison between optimized GRE and RARE sequences for 19F MRI studies [9033-159]
C. D. Soffientini, Politecnico di Milano (Italy); A. Mastropietro, Fondazione IRCCS Istituto Neurologico C. Besta (Italy); M. Caffini, S. Cocco, Politecnico di Milano (Italy); I. Zucca, A. Scotti, Fondazione IRCCS Istituto Neurologico C. Besta (Italy); G. Baselli, Politecnico di Milano (Italy); M. G. Bruzzone, Fondazione IRCCS Istituto Neurologico C. Besta (Italy)

A new resonance-frequency based electrical impedance spectroscopy and its application in biomedical engineering [9033-161]
S. Dhurjaty, Dhurjaty Electronics Consulting LLC (United States); Y. Qiu, M. Tan, B. Zheng, The Univ. of Oklahoma (United States)

POSTER SESSION: NUCLEAR MEDICAL IMAGING

A simple model for deep tissue attenuation correction and large organ analysis of Cerenkov luminescence imaging [9033-164]
F. Habte, A. Natarajan, D. S. Paik, S. S. Gambhir, Stanford Univ. School of Medicine (United States)
Improved attenuation correction for freely moving animal brain PET studies using a virtual scanner geometry [9033-165]
G. I. Angelis, W. J. Ryder, A. Z. Kyme, R. R. Fulton, S. R. Meikle, The Univ. of Sydney (Australia)

Optimization using detective quantum efficiency (DQE) of the high-resolution parallel-hole collimators with CdTe pixelated semiconductor SPECT system [9033-166]
Y.-J. Lee, D.-H. Kim, Y. Kim, H.-J. Kim, Yonsei Univ. (Korea, Republic of)

A novel intra-operative positron imager for rapid localization of tumor margins [9033-167]
H. Sabet, Radiation Monitoring Devices, Inc. (United States); B. C. Stack, Univ. of Arkansas for Medical Sciences (United States); V. V. Nagarkar, Radiation Monitoring Devices, Inc. (United States)

Image reconstruction for the new simultaneous whole-body openPET/CT geometry [9033-169]
Y. Yin, Tokyo Institute of Technology (Japan); H. Tashima, National Institute of Radiological Sciences (Japan); T. Obi, Tokyo Institute of Technology (Japan); T. Yamaya, National Institute of Radiological Sciences (Japan)

Including the effect of molecular interference in the coherent x-ray scattering modeling in MC-GPU and PENELOE for the study of novel breast imaging modalities [9033-170]
B. Ghammraoui, R. Peng, I. Suarez, C. Bettolo, A. Badal, U.S. Food and Drug Administration (United States)

Evaluation of the resolving potency of a novel reconstruction filter on periodontal ligament space with dental cone-beam CT: a quantitative phantom study [9033-171]
Y. Houno, Nagoya Univ. (Japan); T. Hishikawa, K. Gotoh, M. Naitoh, E. Ariji, Aichi-Gakuin Univ. (Japan); Y. Kodera, Nagoya Univ. (Japan)

Unfiltered Monte Carlo-based tungsten anode spectral model from 20 to 640 kV [9033-172]
A. M. Hernandez, J. M. Boone, Univ. of California, Davis (United States)

Hybrid-model for computed tomography simulations and post-patient collimator design [9033-174]
H. Xu, K. Tao, GE Global Research Ctr. (China); P. GK, GE Healthcare Bio-Sciences Ltd. (India); M. Wu, GE Global Research Ctr. (China); X. Cao, GE Healthcare (China); Y. Long, GE Global Research Ctr. (United States); M. Yan, Y. Yao, GE Global Research Ctr. (China); B. De Man, GE Global Research Ctr. (United States)

Physics-based modeling of x-ray CT measurements with energy-integrating detectors [9033-175]
Y. Long, GE Global Research Ctr. (United States); H. Gao, GE Healthcare Technologies (United States); M. Wu, GE China Technology Ctr. (China); J. D. Pack, GE Global Research Ctr. (United States); H. Xu, K. Tao, GE China Technology Ctr. (China); P. F. Fitzgerald, B. De Man, GE Global Research Ctr. (United States)
Quantification of biological tissue and construction of patient equivalent phantom (skull and chest) for infants (1-5 years old) [9033-176]
A. F. Alves, D. R. Pina, F. A. Bacchim Neto, S. M. Ribeiro, J. R. A. Miranda, Univ. Estadual Paulista (Brazil)

Guidewire path simulation using equilibrium of forces [9033-177]
F. M. Cardoso, S. S. Furuie, Univ. de São Paulo (Brazil)

Optical crosstalk in CT detectors and its effects on CT images [9033-178]
H. Youn, S. Kam, J. C. Han, H. K. Kim, Pusan National Univ. (Korea, Republic of)

A comparison of simulation tools for photon-counting spectral CT [9033-179]
R. A. Nasirudin, Technische Univ. München (Germany); P. Penchev, Technische Hochschule Mittelhessen (Germany); K. Mei, E. J. Rummeny, Technische Univ. München (Germany); M. Fiebich, Technische Hochschule Mittelhessen (Germany); P. B. Noël, Technische Univ. München (Germany)

POSTER SESSION: PHASE CONTRAST IMAGING

Optimization of grating-based phase-contrast imaging setup [9033-180]
P. Baturin, M. Shafer, Carestream Health, Inc. (United States)

Design of a compact high-energy setup for x-ray phase-contrast imaging [9033-181]
M. Schüttler, Technische Univ. München (Germany) and Karlsruher Institut für Technologie (Germany); A. Yaroshenko, Technische Univ. München (Germany); M. Bech, Technische Univ. München (Germany) and Lund Univ. (Sweden); G. Potdevin, A. Malecki, M. Chabior, J. Wolf, A. Tapfer, Technische Univ. München (Germany); J. Meiser, D. Kunka, M. Amberger, J. Mohr, Karlsruher Institut für Technologie (Germany); F. Pfeiffer, Technische Univ. München (Germany)

Multilayer coated gratings for phase-contrast computed tomography (CT) [9033-182]
Z. Marton, H. B. Bhandari, Radiation Monitoring Devices, Inc. (United States); H. H. Wen, National Heart, Lung, and Blood Institute (United States); V. V. Nagarkar, Radiation Monitoring Devices, Inc. (United States)

Analysis of a deconvolution-based information retrieval algorithm in x-ray grating-based phase-contrast imaging [9033-184]

Energy weighting in grating-based x-ray phase-contrast imaging [9033-185]
G. Pelzer, T. Weber, G. Anton, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); R. Ballabriga Sune, CERN (Switzerland); F. Bayer, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); M. Campbell, CERN (Switzerland); W. Haas, F. Horn, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); X. Llopali Cudie, CERN (Switzerland); N. Michel, CMS-Schnitattach (Germany); U. Mollenbauer, IBA Dosimetry GmbH (Germany); J. Rieger, A. Ritter, I. Ritter, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); S. Wölfel, IBA Dosimetry GmbH (Germany); W. S. Wong, CERN (Switzerland); A. Zang, T. Michel, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany)
9033 53 **Comparison of propagation- and grating-based x-ray phase-contrast imaging techniques with a liquid-metal-jet source** [9033-186]
T. Zhou, U. Lundström, KTH Royal Institute of Technology (Sweden); T. Thüring, S. Rutishauser, Paul Scherrer Institut (Switzerland) and Swiss Federal Institute of Technology (Switzerland); D. H. Larsson, KTH Royal Institute of Technology (Sweden); M. Stampanoni, Paul Scherrer Institut (Switzerland) and Swiss Federal Institute of Technology (Switzerland); C. David, Paul Scherrer Institut (Switzerland); H. M. Hertz, A. Burvall, KTH Royal Institute of Technology (Sweden)

9033 55 **Increasing the field of view of x-ray phase contrast imaging using stitched gratings on low absorbent carriers** [9033-188]
J. Meiser, M. Amberger, Karlsruher Institut für Technologie (Germany); M. Willner, Technische Univ. München (Germany); D. Kunka, P. Meyer, F. Koch, Karlsruher Institut für Technologie (Germany); A. Hipp, Helmholtz-Zentrum Geesthacht (Germany); M. Walter, microworks GmbH (Germany); F. Pfeiffer, Technische Univ. München (Germany); J. Mohr, Karlsruher Institut für Technologie (Germany)

9033 57 **Effect of coherence loss in differential phase contrast imaging** [9033-191]
W. Cai, Univ. of Rochester Medical Ctr. (United States); R. Ning, Univ. of Rochester Medical Ctr. (United States), Univ. of Rochester (United States), and Koning Corp. (United States); J. Liu, Univ. of Rochester (United States)

9033 58 **Effect of object size, position, and detector pixel size on x-ray absorption, differential phase-contrast and dark-field signal** [9033-192]
J. Wolf, M. Chabior, Technische Univ. München (Germany); J. Sperl, GE Global Research Ctr. (Germany); A. Malecki, Technische Univ. München (Germany); D. Bequé, C. Cozzini, GE Global Research Ctr. (Germany); F. Pfeiffer, Technische Univ. München (Germany)

**POSTER SESSION: RECONSTRUCTION**

9033 59 **Pre-computed backprojection based penalized-likelihood (PPL) reconstruction with an edge-preserved regularizer for stationary Digital Breast Tomosynthesis** [9033-194]
S. Xu, Southern Illinois Univ. Carbondale (United States); C. R. Inscoe, J. Lu, O. Zhou, The Univ. of North Carolina at Chapel Hill (United States) and UNC Lineberger Comprehensive Cancer Ctr. (United States); Y. Chen, Southern Illinois Univ. Carbondale (United States)

9033 5A **Digital breast tomosynthesis reconstruction with an adaptive voxel grid** [9033-195]
B. Claus, GE Global Research Ctr. (United States); H.-P. Chan, Univ. of Michigan (United States)

9033 5B **List-mode PET image reconstruction for motion correction using the Intel XEON PHI co-processor** [9033-196]
W. J. Ryder, G. I. Angelis, R. Bashar, J. E. Gillam, The Univ. of Sydney (Australia); R. Fulton, The Univ. of Sydney (Australia) and Westmead Hospital (Australia); S. Meikle, The Univ. of Sydney (Australia)

9033 5C **Statistical iterative reconstruction using fast optimization transfer algorithm with successively increasing factor in Digital Breast Tomosynthesis** [9033-197]
S. Xu, Southern Illinois Univ. Carbondale (United States); Z. Zhang, Xi’an Jiaotong Univ. (China); Y. Chen, Southern Illinois Univ. Carbondale (United States)
### POSTER SESSION: SYSTEM CHARACTERIZATION

<table>
<thead>
<tr>
<th>Poster Number</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>9033D</td>
<td>Iterative reconstruction of volumetric modulated arc radiotherapy plans using control point basis vectors [9033-198]</td>
<td>J. C. Barbiere, A. Kapulsky, A. Ndlovu, John Theurer Cancer Ctr. at Hackensack Univ. Medical Ctr. (United States)</td>
</tr>
<tr>
<td>9033E</td>
<td>Investigation of the quantitative accuracy of 3D iterative reconstruction algorithms in comparison to filtered back projection method: a phantom study [9033-199]</td>
<td>N. Abuhadi, D. Bradley, Univ. of Surrey (United Kingdom); D. Katare, Kingston Hospital NHS Trust (United Kingdom); Z. Podolyak, Univ. of Surrey (United Kingdom); S. Sassi, Prince Sultan Medical Military City (Saudi Arabia)</td>
</tr>
</tbody>
</table>

### POSTER SESSION: SYSTEM REPORTS

<table>
<thead>
<tr>
<th>Poster Number</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>9033F</td>
<td>Focal spot measurements using a digital flat panel detector [9033-200]</td>
<td>A. Jain, A. Panse, D. R. Bednarek, S. Rudin, Toshiba Stroke and Vascular Research Ctr., Univ. at Buffalo (United States)</td>
</tr>
<tr>
<td>9033G</td>
<td>Dose reduction in CT with correlated-polarity noise reduction: context-dependent spatial resolution and noise properties demonstrating two-fold dose reduction with minimal artifacts [9033-201]</td>
<td>J. T. Dobbins III, J. R. Wells, W. Segars, Duke Univ. (United States) and Duke Univ. Medical Ctr. (United States)</td>
</tr>
<tr>
<td>9033H</td>
<td>Validation of an image-based technique to assess the perceptual quality of clinical chest radiographs with an observer study [9033-202]</td>
<td>Y. Lin, K. R. Choudhury, H. P. McAdams, Duke Univ. (United States); D. H. Foos, Carestream Health, Inc. (United States); E. Samei, Duke Univ. (United States)</td>
</tr>
<tr>
<td>9033K</td>
<td>Comparison of deconvolution techniques to measure directional MTF of FDK reconstruction [9033-205]</td>
<td>C. Lee, J. Park, Y. Ko, J. Baek, Yonsei Univ. (Korea, Republic of)</td>
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</table>

### Best Poster Awards

<table>
<thead>
<tr>
<th>Poster Number</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>9033M</td>
<td>A spectral CT technique using balanced K-edge filter set (Best Poster Award) [9033-207]</td>
<td>Y. Rakvongthai, Massachusetts General Hospital (United States); W. Worstell, Photo Diagnostic Systems Inc. (United States) and Massachusetts General Hospital (United States); G. El Fakhri, J. Ouyang, Massachusetts General Hospital (United States)</td>
</tr>
</tbody>
</table>
A flat-field correction method for photon-counting-detector-based micro-CT [9033-208]
S. E. Park, J. G. Kim, M. A. A. Hegazy, M. H. Cho, S. Y. Lee, Kyung Hee Univ. (Korea, Republic of)

Design of a nested SPECT-CT system with fully suspended CT sub-system for dedicated breast imaging [9033-209]
J. P. Shah, Duke Univ. (United States) and Duke Univ. Medical Ctr. (United States);
S. D. Mann, Duke Univ. Medical Ctr. (United States); R. L. McKinley, ZumaTek, Inc. (United States);
M. P. Tornai, Duke Univ. (United States) and Duke Univ. Medical Ctr. (United States)

Phase contrast portal imaging for image-guided microbeam radiation therapy [9033-210]
K. Umetani, Japan Synchrotron Radiation Research Institute (Japan); T. Kondoh, Kobe Univ. Graduate School of Medicine (Japan)

Rotating and semi-stationary multi-beamline architecture study for cardiac CT imaging [9033-211]
J. Wang, P. Fitzgerald, H. Gao, Y. Jin, GE Global Research Ctr. (United States); G. Wang, Rensselaer Polytechnic Institute (United States); B. De Man, GE Global Research Ctr. (United States)

Determination of minor and trace elements in kidney stones by x-ray fluorescence analysis [9033-212]
A. Srivastava, B. J. Heisinger, V. Sinha, H.-K. Lee, X. Liu, Missouri Univ. of Science and Technology (United States); M. Qu, X. Duan, S. Leng, C. H. McCollough, Mayo Clinic (United States)

Workflow for the use of a high-resolution image detector in endovascular interventional procedures [9033-213]
R. Rana, B. Loughran, S. N. Swetadi Vasan, L. Pope, C. N. Ionita, A. Siddiqui, N. Lin, D. R. Bednarek, S. Rudin, Toshiba Stroke and Vascular Research Ctr., Univ. at Buffalo (United States)

Feasibility of active sandwich detectors for single-shot dual-energy imaging (Best Poster Award) [9033-214]
S. Yun, J. C. Han, D. W. Kim, H. Youn, H. K. Kim, Pusan National Univ. (Korea, Republic of);
J. Tanguay, Univ. of British Columbia (Canada); I. A. Cunningham, Robarts Research Institute (Canada) and Univ. of Western Ontario (Canada)

Assessing and improving cobalt-60 digital tomosynthesis image quality [9033-216]
M. B. Marsh, Cancer Ctr. of Southeastern Ontario (Canada); L. J. Schreiner, A. T. Kerr, Cancer Ctr. of Southeastern Ontario (Canada) and Queen’s Univ. (Canada)

2D and 3D registration methods for dual-energy contrast-enhanced digital breast tomosynthesis [9033-217]
K. C. Lau, S. Roth, A. D. A. Maidment, Univ. of Pennsylvania (United States)
Model predictions for the WAXS signals of healthy and malignant breast duct biopsies [9033-221]
R. J. LeClair, Laurentian Univ. (Canada)

X-ray coherent scatter imaging for surgical margin detection: a Monte Carlo study [9033-222]
M. N. Lakshmanan, A. J. Kapadia, B. P. Harrwood, Duke Univ. Medical Ctr. (United States); D. Brady, Duke Univ. (United States); E. Samei, Duke Univ. Medical Ctr. (United States) and Duke Univ. (United States)

Limitations of anti-scatter grids when used with high resolution image detectors [9033-223]
V. Singh, A. Jain, D. R. Bednarek, S. Rudin, Toshiba Stroke and Vascular Research Ctr., Univ. at Buffalo (United States)

Scatter reduction for high resolution image detectors with a region of interest attenuator [9033-225]
A. Jain, D. R. Bednarek, S. Rudin, Toshiba Stroke and Vascular Research Ctr., Univ. at Buffalo (United States)

Potential use of a single scatter model in breast CBCT applications [9033-226]
C. Laamanen, R. J. LeClair, Laurentian Univ. (Canada)
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John Yorkston, Carestream Health Technology and Innovation Center (United States)

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2  CT and Applications
   Taly G. Schmidt, Marquette University (United States)
   Robert M. Nishikawa, University of Pittsburgh (United States)

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   Thomas G. Flohr, Siemens Healthcare (Germany) and Eberhard Karls Universität Tübingen (Germany)

4  Algorithms
   Thomas G. Flohr, Siemens Healthcare (Germany) and Eberhard Karls Universität Tübingen (Germany)
   Kirsten Boedeker, Toshiba Medical Research Institute USA (United States)

5  CT Reconstructions
   Guang-Hong Chen, University of Wisconsin-Madison (United States)
   Marc Kachelriess, Deutsches Krebsforschungszentrum (Germany)

6  Reconstruction
   Jinyi Qi, University of California, Davis (United States)
   Despina Kontos, The University of Pennsylvania (United States)

7  Cone Beam CT and Novel Design
   Stephen J. Glick, University of Massachusetts Medical School (United States)
   Michael Grass, Philips Research (Germany)

8  Tomosynthesis
   John M. Sabol, GE Healthcare (United States)
   Anders Tingberg, Lund University (Sweden)

9  Multi-energy CT
   John A. Rowlands, Thunder Bay Regional Research Institute (Canada)
   Taly G. Schmidt, Marquette University (United States)
10 Multi-energy Imaging and Detectors
   John A. Rowlands, Thunder Bay Regional Research Institute (Canada)
   Joseph Y. Lo, Duke University Medical Center (United States)

11 New Contrast Mechanisms
   Norbert J. Pelc, Stanford University (United States)
   Maria Drangova, Robarts Research Institute (Canada)

12 Dose
   Andreu Badal, U.S. Food and Drug Administration (United States)
   Hilde Bosmans, Katholieke Universiteit Leuven (Belgium)

13 Phantoms
   Bruce R. Whiting, University of Pittsburgh (United States)
   Andreu Badal, U.S. Food and Drug Administration (United States)

14 Metrology and System Characterization
   Karim S. Karim, University of Waterloo (Canada)
   Joseph Y. Lo, Duke University Medical Center (United States)

15 Performance Evaluation
   Despina Kontos, The University of Pennsylvania (United States)
   Christoph Hoeschen, Helmholtz Zentrum München GmbH (Germany)
Awards

Robert F. Wagner Award

Robert F. Wagner was an active scientist in the SPIE Medical Imaging meeting, starting with the first meeting in 1972 and continuing throughout his career. He ensured that the BRH, and subsequently the CDRH, was a sponsor for the early and subsequent Medical Imaging meetings, helping to launch and ensure the historical success of the meeting. The Robert F. Wagner All-Conference Best Student Paper Award (established 2014) is acknowledgment of his many important contributions to the Medical Imaging meeting and his many important advances to the field of medical imaging.

This award is cosponsored by:

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The Medical Image Perception Society

2014 Recipients:

First Place: MRI signal and texture features for the prediction of MCI to Alzheimer's disease progression (9035-78)
**A. Martínez-Torteya,** J. A. Rodriguez-Rojas, J. M. Celaya-Padilla, J. I. Galván-Tejada, V. M. Treviño-Alvarado, Sr., J. G. Tamez-Peña, Tecnológico de Monterrey (Mexico)

Second Place: Distinguishing benign confounding treatment changes from residual prostate cancer on MRI following laser ablation (9036-49)
**G. Litjens,** H. Huisman, Radbound Univ. Nijmegen Medical Ctr. (Netherlands); R. Elliot, Case Western Reserve Univ. (United States); N. Shih, M. Feldman, Univ. of Pennsylvania (United States); S. Viswnath, Case Western Reserve Univ. (United States); J. Futterrer, J. Bomers, Radboud Univ. Nijmegen Medical Ctr. (Netherlands); A. Madabhushi, Case Western Reserve Univ. (United States)
Conference Awards

2014 Recipients:

Best Student Paper Awards sponsored by Carestream

First Place
Apparatus and fast method for cancer cell classification based on high harmonic coherent diffraction imaging in reflection geometry [9033-58]
M. Zürch, Friedrich-Schiller-Univ. Jena (Germany); S. Foertsch, Siemens AG (Germany) and Friedrich-Alexander-Univ. Erlangen (Germany); M. Matzas, Siemens AG (Germany);
K. Pachmann, Univ. Hospital Jena (Germany) and Ctr. for Transfusion Medicine (Germany);
R. Kuth, Siemens AG (Germany); C. Spielmann, Friedrich-Schiller-Univ. Jena (Germany) and Helmholtz Institute Jena (Germany)

Second Place
Cascaded systems modeling of signal, noise, and DQE for x-ray photon counting detectors [9033-70]
J. Xu, W. Zbijewski, G. Gang, J. W. Stayman, K. Taguchi, Johns Hopkins Univ. (United States);
M. Lundqvist, E. Fredenberg, Philips Women’s Healthcare (Sweden); J. A. Carrino,
J. H. Siewerdsen, Johns Hopkins Univ. (United States)

Third Place
Feasibility study of spectral computed tomography (CT) with gold as a new contrast agent [9033-155]
M. Müllner, H. Schlattl, U. Oeh, C. Hoeschen, Helmholtz Zentrum München GmbH (Germany);
O. Dietrich, Ludwig-Maximilians-Universit. Hospital München (Germany)

Poster Awards sponsored by GE Healthcare

First Place
Feasibility of active sandwich detectors for single-shot dual-energy imaging [9033-214]
S. Yun, J. C. Han, D. W. Kim, H. Youn, H. K. Kim, Pusan National Univ. (Korea, Republic of);
J. Tanguay, Univ. of British Columbia (Canada); I. A. Cunningham, Robarts Research Institute (Canada) and Univ. of Western Ontario (Canada)

Runner Up
A spectral CT technique using balanced K-edge filter set [9033-207]
Y. Rakvongthai, Massachusetts General Hospital (United States); W. Worstell, Photo Diagnostic Systems Inc. (United States) and Massachusetts General Hospital (United States); G. El Fakhri,
J. Ouyang, Massachusetts General Hospital (United States)