【Joint Sessions for Japan Radiology Congress】

Opening Ceremony: April 12 (Fri) 13:00 ～ 14:30 (Main Hall)

Hiroshi Honda  Kyushu University (JRS)
Junji Morishita  Kyushu University (JSRT)
Fukai Toyofuku  Kyushu University (JSMP)
Kenichi Komatsu  Japan Medical Imaging and Radiological Systems Industries Association (JIRA)

Plenary Session: Special Lecture
April 12 (Fri) 14:00 ～ 14:30 (Main Hall)

New Horizons Lecture
Moderator: Kobe University Kazuro Sugimura
Molecular Cancer Imaging Can Evolve to a Cancer-cell Specific Therapy
National Cancer Institute, NIH; Molecular Imaging Program Hisataka Kobayashi

International Technical Exhibition of Medical Imaging (ITEM) 2013 Opening Ceremony
April 12 (Fri) 9:30 ～ 10:00 (Exhibition Hall 1F Entrance Area)

Joint Symposium 1
April 12 (Fri) 14:40 ～ 16:40 (Main Hall)

Clinical Applications and Future Prospects for Evolving Imaging Modalities
Moderator: Kyushu University Hiroshi Honda
Kyushu University Fukai Toyofuku

1. State of the Art and Future Direction in Area-Detector CT
   Kobe University Graduate School of Medicine Yoshiharu Ohno
2. Iterative Reconstruction
   Hiroshima University Kazuo Awai
3. Photon Counting CT
   Hosei University Koichi Ogawa
4. Dual RF Transmission
   Kobe University Hospital Katsusuke Kyotani
5. Full Digital MRI
   Department of Biomedical Engineering, Tokai University School of Engineerin Taro Takahara
6. Ultra-high Field MRI
   Iwate Medical University Makoto Sasaki

Discussion
Joint Symposium 2  
April 13 (Sat) 13:00 ~ 15:00 (Main Hall)  
「Computer-Aided Diagnosis」  
Moderator: Kyushu University Junji Morishita  
University of Tokyo Kuni Otomo  

Keynote Lecture  
Computer-Aided Diagnosis in Medical Imaging: Current Status and Future Potential  
The University of Chicago / Gunma Prefectural College of Health Sciences, Maebashi, Japan Kunio Doi  
1. Recent Progress and Issues on CAD Research and Development from a Technical Point of View  
Gifu University Hiroshi Fujita  
2. Expectation and Problems for Mammographic CAD  
Department of Advanced Diagnosis, National Hospital Organization Nagoya Medical Center, Clinical Medical Center Tokiko Endo  
3. Improved Detection of Lung Nodules on Chest Radiographs with a Newly Developed Software Program  
St. Luke’s International Hospital Masaki Matsusako  
4. Problems and Promise in CAD for Effective CTC  
National Cancer Center Hospital Gen Inuma  
5. Usefulness of Automated Image Analysis System on Evaluation of Efficacy of Chemotherapeutic Agents  
Saga University Naoko Sueoka-Aragane  
6. CAD の普及に向けて：産業界からの提言  
Japan Medical Imaging and Radiological Systems Industries Association Naoki Morooka  

Joint Symposium 3  
April 14 (Sun) 9:10 ~ 11:10 (Main Hall)  
「Innovative Technologies in Medical Physics」  
Moderator: Kyushu University Fukai Toyofuku  
Cancer Institute Hospital Tomoharu Sato  
1. X-ray Phase Imaging Reaching Clinics  
Tohoku University Atsushi Momose  
2. PET Imaging in Proton Therapy  
National Cancer Center Hospital East Teiji Nishio  
3. Next Generation Radiotherapy System and Technologies  
Accuthera Inc. Eiji Tanabe  
4. Analyses of Brain Hydrodynamics and Biomechanics Using MRI  
Kanazawa University Tosiaki Miyati  
5. New Technology of Radiotherapy Treatment Planning  
Kaizuka City Hospital Hideki Takegawa
Joint special project
April 13 (Sat) 10:30 ～ 11:50 (303)
[Global Human Resource Development]
Moderator: Keio University School of Medicine  Sachio Kuribayashi
Kyushu University  Junji Morishita
1. Accreditation for Medical Education based on the Global Standards
   Center Education Research in Medicine and Dentistry,
   Tokyo Medical and Dental University  Nobuo Nara
2. Global Human Resource Development in Industry
   Daisuke Nakajima
3. JSRT’s Ambitions for Globalization
   Kanazawa University  Shigeru Sanada
4. “How are academic radiologists evaluated?”: Metrics used to evaluate academic physicians in US
   University of Iowa Hospitals and Clinics, USA  Yutaka Sato

Reception for All Participants
April 12 (Fri) 18:15 ～ 19:30 (Yokohama Bay Hotel Tokyu B2F Queen’s Grand Ballroom)

Plenary Session: Awards Ceremony and Closing Session
April 14 (Sun) 15:15 ～ 16:00 (Main Hall)
【JSMP Program】

(A) Plenary Lectures
(1) April 12 (Fri) 11:00–11:55 (418,419)
Moderator: Kyushu University  Fukai Toyofuku
「Initial Stereotactic Ablative Radiotherapy Experience using Vero」
Invited Speaker: University of Texas Southwestern Medical Center, USA  Dr. Timothy D. Solberg
(2) April 13 (Sat) 11:00–11:55 (418,419)
Moderator: Kyushu University  Hidetaka Arimura
「Computational Intelligence in Medical Image Processing, Analysis and Diagnosis」
Invited Speaker: The University of Chicago, USA  Dr. Kenji Suzuki

(B) International Symposium
April 14 (Sun) 13:00–14:30 (418,419)
「Education of Medical Physics in Asia – Role of Each Country and Society」
Moderator: Hiroshima University  Shuichi Ozawa
National Institute of Radiological Sciences  Shigekazu Fukuda
1. Opening Address and Introduction
Hiroshima University  Shuichi Ozawa
2. Current Status, Future of AFOMP and Role of Japan in Asia-Oceania
Osaka University  Kiyonari Inamura
3. IAEA-TCS-37 and Education of Radiation Oncology Physics in Thailand
Chulalongkorn University, Thailand  Anchali Krisanachinda
4. IAEA-TCS-47 and Education of Diagnostic Radiology Physics in Japan
Nagoya University  Yoshie Kodera
5. IAEA-TCS-50 and Education of Nuclear Medicine Physics in Bangladesh
Bangladesh Atomic Energy Commission, Bangladesh  Kamila Afroj Quadir
6. Medical Physics Education in Korea
The Catholic University of Korea, Korea  Tae-Suk Suh
7. Panel Discussion
Chair: National Institute of Radiological Sciences  Shigekazu Fukuda
Hiroshima University  Shuichi Ozawa
8. Closing Address
National Institute of Radiological Sciences  Shigekazu Fukuda
(C) Symposium
April 13 (Sat) 13:00–14:30 (418,419)
「Novel Development of Medical Imaging Detector Systems (Special Symposium)」
Moderator: Kyushu University Akihiro Nohtomi
1. Development of transXend Detector (Current Mode Detector for Energy-resolved CT) and Application of it for Low Dose Exposure CT
Kyoto University Ikuo Kanno
2. Micron-CT using PIXE
Tohoku University Keizo Ishii
3. Present and future on radiation imaging system using thermoluminescence slab dosimeter
Tokyo Metropolitan University Kiyomitsu Shinsho

(D) Lunch Time Lectures (Educational Lecture)
(1) April 12 (Fri) 12:05–12:50 (418,419)
Moderator: Hiroshima University Shuichi Ozawa
「Real-time In-room Imaging for Locating Moving Tumors in Radiotherapy」
University of California, Davis, USA Dr. Tokihiro Yamamoto
(2) April 13 (Sat) 12:05–12:50 (418,419)
Moderator: Kyushu University Yoshiyuki Shioyama
Kanagawa Cancer Center Shinichi Minohara
「Active vs. Passive scanning Technology —Advantages and Drawbacks—」
1. 「Pencil beam scanning method and its potential」
National Institute of Radiological Sciences Taku Inaniwa
2. 「Merits and demerits of a Broad Beam Technique in Particle Beam Therapy」
Hyogo Ion Beam Medical Center Takashi Akagi
(3) April 14 (Sun) 12:05–12:50 (418,419)
Moderator: Nagoya University Seiichi Yamamoto
「History and Perspective of Physics in Nuclear Medicine」
National Institute of Radiological Sciences Hideo Murayama

(D) Morning Educational Lectures (Power-up Seminar)
(1) April 12 (Fri) 8:15–8:55 (418)
Moderator: National Cancer Center Hospital East Teiji Nishio
「Advance in Dose Standard and Dosimetry Protocol for External Beam Radiation Therapy」
Invited Speaker: Tokyo Metropolitan University Hidetoshi Saitoh
(2) April 13 (Sat) 8:15–8:55 (418)
Moderator: National Institute of Radiological Sciences Hideyuki Mizuno
「Impact of Monte Carlo simulation for Radiotherapy」
Invited Speaker: Kumamoto University Fujio Araki
(3) April 14 (Sun) 8:15–8:55 (418)
Moderator: Niigata University Shinichi Wada
「Basics of Image Segmentation — Good Relationship between Physics and Image Processing — 」
Invited Speaker: Kyushu University Hidetaka Arimura

(E) RPT Doi Awards Ceremony and Winners’ Lectures
[JSMP-JSRT Joint Session]
April 14 (Sun) 12:10–13:10 (F201)
General Moderator: RPT Editor-in-Chief Kunio Doi

1) Diagnostic Imaging Field
Moderator: RPT Deputy Editor Sigehiko Katsuragawa
RPT Vol.5 No.1
Automated segmentation of psoas major muscle in X-ray CT images by use of a shape model: preliminary study
Gifu University Naoki Kamiya

2) Nuclear Medicine and MR Fields
Moderator: RPT Deputy Editor Tomoyuki Hasegawa
RPT Vol.5 No.2
Optimization of injection dose based on noise-equivalent count rate with use of an anthropomorphic pelvis phantom in three-dimensional $^{18}$F-FDG PET / CT
National Cancer Center Hospital East Kazumasa Inoue

3) Radiotherapy Field
Moderator: RPT Deputy Editor Masahiro Endo
RPT Vol.5 No.2
In-treatment 4D cone-beam CT with image-based respiratory phase recognition
University of Tokyo Hospital Satoshi Kida

JSMP Board of Directors
April 11(Thu) 12:00–16:00 (421)

JSMP General Meeting of Members
April 13 (Sat) 17:10–18:40 (419)

Japanese College of Medical Physics
April 13 (Sat) 18:40–19:40 (419)

Various Committees
April 11(Thu) –April 14 (Sun)
【General Session】

April 11 (Thu)  PACIFICO YOKOHAMA Conference Center  418

1. Photon/Electron Therapy 1 (4DRT/Real Time)  13:00–14:00  Moderator: Yuki Miyabe

0-001  A study of three dimensional tracking method for organ motion on two cross-sectional ultrasound images
Gunma University  Yoshiki Kubota

0-002  Real-time tumor-tracking radiotherapy system with mono X-ray fluoroscopy
Hokkaido University  Naoki Miyamoto

0-003  Development of a real time motion image prediction system with ROI selection for lung tumor tracking in radiation therapy
The University of Tokyo  Ritu Bhusal Chhatkuli

0-004  Impact of respiratory motion on dose profile during VIRTUAL WEDGE delivery
Osaka University  Nobuhide Wakai

0-005  Investigation of well-balanced kV x-ray imaging condition between skin dose and noise for dynamic tumor-tracking irradiation in Vero4DRT
Institute of Biomedical Research and Innovation  Takahiro Nakai

0-006  Mechanical accuracy of dynamic tumor-tracking during arc irradiation with gimbaled x-ray head
Kyoto University  Tomohiro Ono

2. Photon/Electron Therapy 2 (CBCT)  14:00–14:50  Moderator: Akihiro Takemura

0-007  Time-ordered four dimensional Cone-Beam CT
The University of Tokyo  Masahiro Nakano

0-008  Accuracy evaluation of Atlas-based Auto-Segmentation software in cone-beam CT image
Fujimoto Hayasuzu Hospital  Hidemi Kamezawa

0-009  Basic study of 4D CBCT reconstruction using the detection of the target position from 2D projection images.
Tokai University Hospital  Keisuke Usui

0-010  Evaluation for 4 dimensional reconstruction of a cone beam CT on a linac with a dynamical tracking system
Juntendo University  Satoru Sugimoto

0-011  Improvement of 4D Cone-beam CT image quality with iterative reconstruction
The University of Tokyo  Satoshi Kida

3. Photon/Electron Therapy 3 (CBCT/Dose Calculation)  15:00–16:00  Moderator: Kunihiko Tateoka

0-012  Dose calculation using in-treatment 4D kilovoltageCBCT and in-treatment linac parameters during VMAT for a lung tumor
The University of Tokyo Hospital  Akira Sakumi

0-013  Monte Carlo calculation of patient dose distributions from kV-cone beam CT for image-guided radiation therapy
Kumamoto University  Kazunari Hioki

0-014  Monte Carlo dose verification of intensity modulated radiation therapy based on MATLAB
Kumamoto University  Yuuki Tomiyama

0-015  Measurement of dose evaluation indices using cone-beam CT for prostate IMRT
Kyushu University Hospital  Taka-Aki Hirose

0-016  Study of conversion of energy subtracted CT number to electron density using dual energy CT
Niigata University  Masayoshi Tsukihara
Electron density measurement with dual energy CT for radiation treatment planning: comparison of projection-based versus image-based virtual monochromatic imaging

Kobe Medical Cancer Center  Toshiyuki Ogata

0-017

4. Photon/Electron Therapy 4 (QA/QC1) 16:00–17:10  Moderator: Iori Sumida

0-018  Fundamental study for scanning methods in IMRT verification using Gafchromic EBT3

Institute of Biomedical Research and Innovation  Kazuki Kubo

0-019  Evaluation of an independent monitor unit calculation software for intensity modulated radiation therapy

Kanagawa Cancer Center  Kenji Shioiri

0-020  Evaluation of the accuracy of IMRT QA using 3DVH software

Tohoku University  Makoto Ogasawara

0-021  Creating a daily personal dose management software that can be visually evaluated in IMRT using the MLC Log File

Tama-Hokubu Medical Center  Kazunori Watanabe

0-022  Characteristic examination of the detector in the verification of VMAT for Prostate with dose distribution.

Seirei Hamamatsu General Hospital  Yuta Muraki

0-023  Basic characteristic comparison of the COMPASS and the MatriXX Evolution

Kagoshima University Medical and Dental Hospital  Masahiko Toyota

0-024  Usability of the high-precision measuring instrument to manage the radiation beam of the high-precision radiotherapy equipment

Yokohama CyberKnife Center  Mitsuhiko Inoue
5. Diagnostic 1 13:00-13:40  Moderator: Hidetake Hara

0-025  Investigation of the irregularity of the sensitivity in the aged deterioration of the IP for mammography  
Nagasaki Municipal Hospital  Soichiro Kawaguchi

0-026  Analysis of phase contrast using transmission-type x-ray source and flat panel detector  
Fujita Health University  Ai Ikeya

0-027  Extraction of obstacles in panoramic x-ray images with a tomosynthesis method  
Hosei University  Junpei Yamamoto

0-028  3D kinematic estimation of temporomandibular joint using X-ray fluoroscopic images  
MEI Center Osaka University  Takaharu Yamazaki

6. Diagnostic 2 (CT) 13:40-14:30  Moderator: Shinichi Wada

0-029  Simple noninvasive approach to assess gantry rotation time: Relation between the accuracy and detector position  
Shiga Medical Center for Children  Atsushi Fukuda

0-030  Study on influence of scattered radiation in ADCT  
Hokkaido University Hospital  Michiaki Yamashita

0-031  The Characteristic of a Dose to Head Region in Dual Source CT  
Kitasato University  Hidetake Hara

0-032  Withdrawn

0-033  Measurement of linear attenuation coefficients with a photon counting CT  
Hosei University  Mariko Matsumoto

7. Diagnostic 3 (Photon Counting) 14:40-15:30  Moderator: Koichi Ogawa

0-034  80 kcps energy-dispersive X-ray CT system utilizing a CdTe detector and a comparator  
Iwate Medical University Hospital  Yuichi Sato

0-035  Dark-count-less photon-counting X-ray CT system using a YAP(Ce)-MPPC detector  
Iwate Medical University  Yasuyuki Oda

0-036  Energy-dispersive CT system with a Si-PIN X-ray diode and its application to gadolinium K-edge imaging  
Iwate Medical University  Eiichi Sato

0-037  High-sensitivity CT system using a direct-conversion Si-PIN X-ray diode and its application to gadolinium K-edge imaging  
Iwate Medical University  Eiichi Sato

0-038  Development of an LSO-MPPC spectrometer and its applications high-speed energy-dispersive X-ray CT system  
Iwate Medical University  Eiichi Sato

8. Diagnostic 4 (CAD) 15:30-16:20  Moderator: Hideaki Haneishi

0-039  Histogram analysis of 3D cerebral cortical thicknesses on MR images for diagnosis of Alzheimer’s disease  
Kyusyu University Hospital  Chiaki Tokunaga

0-040  Noise-mapping of cerebral infarction CT image obtained in head CT examination with organ-based tube current modulation system  
Nagoya University  Chiyo Yamauchi-Kawaura
0-041 Let's consider sensory rating of the vision assessment methods of X-ray examination. Thurstone’s Paired Comparison and Scheffe’s Paired Comparison
Ureshino Medical Center Yukio Inoue

0-042 Investigation of image property in AIDR3D
Hokkaido University Hospital Michiaki Yamashita

0-043 Reconstruction of CT images with projection data including missing parts
Hosei University Futoshi Kaibuki

9. Radiation Protection 16:30–17:00 Moderator: Hiroki Ohtani

0-044 A study on a real-time x-ray entrance dose monitoring system in interventional radiology using Microsoft Kinects
Kyushu University Kenta Kozono

0-045 X-ray detector for real-time dose monitoring in interventional radiology
National Institute of Radiological Sciences Fumihiko Nishikido

0-046 Antioxidant effect of transglycosylated rutin for irradiated CHO cell
The University of Tokyo Shigeaki Sunada
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<td><strong>10. Photon/Electron Therapy 5 (QA/QC2)</strong> 9:00–10:00</td>
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<tr>
<td>0-047 Energy Spectrum Inference of clinical photon beam by use of PDD</td>
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<td>0-048 Comparison between multiple facilities of depth dose, off-axis ratio and output factor using high-energy photon radiotherapy</td>
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<td>0-049 Progress of TPS-QC supporting program by a third-party evaluation agency</td>
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<td>0-050 Function as an independent quality assurance for designated regional cancer centers</td>
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<td>0-051 Effectiveness of on-site IMRT measurements by a third party organization: An important role of third party evaluation</td>
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<td>0-052 Verification of the fundamental data about the polymer gel dosimeter for evaluating the pelvic organ dose in brachytherapy</td>
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<td><strong>11. Photon/Electron Therapy 6 (QA/QC3)</strong> 10:00–11:00</td>
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<tr>
<td>0-053 The characteristics of EPID for in-vivo dosimetry</td>
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<td>0-054 Analysis of post-irradiation growth effect for development of dose verification technique using a radiochromic film</td>
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<td>0-055 Examination of measurement of irradiation field by difference of measurement modality</td>
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<td>0-056 Clearance simulation of Gamma Knife radiosurgery with Leksell skull frame</td>
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<td>0-057 Development of a collision detection simulator among treatment apparatus for radiotherapy treatment planning</td>
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<td>0-058 Patient Collision Simulator for Non-coplanar Stereotactic Body Radiation Therapy</td>
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<td>0-059 To Acquire Tumor Position in Thorax Lesion accompany with Breathing Movement Using EPID Images</td>
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<td>0-060 Verification of MLC motion during RapidArc delivery by use of an in-house program</td>
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<td>0-061 Verification of irradiation parameters on VMAT for head and neck cancer</td>
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<td>0-062 Dose reconstruction for moving targets in VMAT</td>
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<td>0-063 Impact of MLC position errors for VMAT dose distributions</td>
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<td>0-064 Independent verification of dynamic machine parameters for VMAT QA using DICOM-RT</td>
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</table>
0-180  [Invited Speaker] Implementation of EPIQA portal dosimetry software for volumetric modulated arc therapy pre-treatment QA
Chulalongkorn University, Thailand  Chitchaya Suwanraksa

13. Photon/Electron Therapy 8 (Monte Carlo)  15:50–17:00  Moderator: Satoshi Kito

0-065  Reduction of the number of remapped respiratory phase images in four-dimensional Monte Carlo dose calculation of dynamic tumor tracking irradiation
Kyoto University  Yoshitomo Ishihara

0-066  The Effect of The Scatters from the physical wedge filter on the surface dose out of the field
Nagoya University  Maiko Niwa

0-067  The study of expansion of irradiation field size for IMRT technique vero4DRT gimbal mechanism of radiation therapy equipment
Tokai University  Shigeto Kabuki

0-068  [Invited Speaker] MONTE CARLO SIMULATION OF ABSORBED DOSE FROM LINAC ON CT PHANTOM VOXEL BY USING MCNP5 CODE IN CASE OF BRAIN TUMOUR
University of Science, VNU-HCMC, Vietnam  Nguyen Thi Cam Thu

0-069  Dosimetric perturbation due to scattered rays released by a gold marker used for prostate tracking in multiple field radiotherapy
Hiroshima Red Cross Hospital & Atomic-Bomb Survivors Hospital  Kosaku Habara

0-070  Verification of beam degrader in TSET by GEANT4
Keio University  Natsumi Futakami

0-071  Dose assessment by the water absorbed dose dosimetry phantom of the Ir-192 brachytherapy source
Kawasaki College of Allied Health Professions  Naomasa Narihiro

14. Radiation Measurement 1 (Application of Monte Carlo)  17:00–17:50  Moderator: Masao Matsumoto

0-072  Monte Carlo-calculated patient organ doses from a diagnostic X-ray CT
Kumamoto University  Takeshi Ohno

0-073  Material decomposition with a photon counting CT
Hosei University  Takeshi Maji

0-074  Calculation and evaluation of beam quality correction factor for a parallel-plate chamber by using Monte Carlo with EGS5/PHITS codes
Osaka University  Masao Matsumoto

0-075  [Invited Speaker] Study on dose rate distribution surrounding to diagnostic X ray facilities and estimate the influence of scattering effect from the shieldings by MCNP5 code
University of Science, VNU-HCM, Vietnam  Truong Thi Hong Loan

0-076  A Improvement Method for EPID Images using Electron Mode of Linear Accelerator
Tokyo Metropolitan University  Atsushi Myojyama
15. Particle Therapy 1 (BNCT) 9:00–10:30  Moderator: Shunsuke Yonai

0-077 Status Report of Aizawa Hospital Proton Therapy center Project Part 1  
Aizawa Hospital Proton Therapy Center  Isamu Maeshima

0-078 Present Status of the SAGA-HIMAT Project  
SAGA-HIMAT Foundation  Mitsutaka Kanazawa

0-079 Status Report of Aizawa Hospital Proton Therapy Center Project Part 2  
Aizawa Hospital Proton Therapy Center  Yuya Sugama

0-080 Beam property of Double-decker compact proton therapy system  
Sumitomo Heavy Industries, Ltd.  Daizo Amano

0-081 Proton beam tuning for the breast cancer treatment at the Medipolis Proton Therapy and Research Center  
Medipolis Proton Therapy and Research Center, Ibusuki City  Yuya Toi

0-082 Respiratory Rate and Synchrotron Pattern Cycle Dependence of Treatment Time  
Medipolis Medical Research Institute  Naoaki Kondo

0-083 Improving Efficiency of Proton Therapy by Utilizing a Rotating Gantry Port as a Horizontal Fixed Port  
Medipolis Medical Research Institute  Naoaki Kondo

0-084 Status of the Development of Acc-Based BNCT Irradiation System at a Down Town Hospital  
Kyoto University Research Reactor Institute  Tooru Kobayashi

0-085 Dose Estimation for Internal Organs in Body-trunk BNCT  
Kyoto University Research Reactor Institute  Yoshinori Sakurai

16. Particle Therapy 2 (PET) 14:40–15:50  Moderator: Teiji Nishio

0-086 Study of fragmentation reaction in the body for proton therapy  
Rikkyo University  Keiichiro Matsushita

0-087 Washout effect in RI beam irradiation of rat using small OpenPET  
National Institute of Radiological Sciences  Yoshiyuki Hirano

0-088 Clinical application of autoactivated PET-CT after Carbon Ion therapy in G.H.M.C.  
Gunma University Hospital  Takayoshi Ishii

0-089 The PET-based tumor tracking with error reduction method  
Chiba University  Tetsuya Shinaji

0-090 In-Beam Imaging Test of a Small Prototype for the Second Generation OpenPET  
National Institute of Radiological Sciences  Taiga Yamaya

0-091 Estimation of standard deviation of range in 3-D irradiation by using Fisher’s Information  
Tokyo Institute of Technology  Yasunori Nakajima

0-092 A Monte Carlo simulation of real-time tumor tracking by the OpenPET: a feasibility study  
National Institute of Radiological Sciences  Hideaki Tashima

17. Particle Therapy 3 (QA/Measurement) 15:50–17:00  Moderator: Mutsumi Tashiro

0-093 Dose Measurement Program in Quality Assurance for Broad Beam Therapy at HIMAC  
National Institute of Radiological Sciences  Manabu Mizota

0-094 The positional accuracy of robotic arm treatment bed using Micrometer Drive  
National Cancer Center Hospital East  Tsunemichi Akita

0-095 Evaluation of the phantom for cone-beam CT to create CT number-linear stopping power ratio conversion table for proton treatment  
Tokyo Metropolitan University  Ryuta Hirai
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<th>Title</th>
<th>Institution</th>
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<tr>
<td>0-096</td>
<td>Examination of the daily QA method of the isocenter positions in In-room CT and orthogonal DR</td>
<td>National Cancer Center Hospital East</td>
<td>Tatsuya Mogaki</td>
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<td>0-097</td>
<td>Development of the Phantom Based on ROI Information in Radiotherapy Planning</td>
<td>Fukui Prefectural Hospital</td>
<td>Makoto Sasaki</td>
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<td>0-098</td>
<td>Derivation of the lateral beam spread with concentric electrode ionization chamber in heavy-ion therapy</td>
<td>National Institute of Radiological Sciences</td>
<td>Yousuke Hara</td>
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<td>0-099</td>
<td>Measurement of field size dependence of radiation quality of carbon beams using silicon detector.</td>
<td>Gunma University</td>
<td>Tatsuaki Kanai</td>
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<td>0-100</td>
<td>Simulation study of an axially extendable multiplex cylinder PET</td>
<td>National Institute of Radiological Sciences</td>
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<td>Eiji Yoshida</td>
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<td>0-101</td>
<td>Monte-Carlo simulation of sensitivity and NECR of a 2m-long PET scanner</td>
<td>Tokyo Institute of Technology</td>
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<td>0-102</td>
<td>Accuracy of Attenuation Coefficients with Dual Energy Virtual Monochromatic Imaging for SPECT Attenuation Correction</td>
<td>Osaka University Hospital</td>
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<td>Kyoto University</td>
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<td>Shinya Sonoda</td>
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### 19. Nuclear Medicine/MRI  10:00–10:50  Moderator: Toru Yamamoto

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<td>0-104</td>
<td>Development of an integrated PET/MRI detector: Evaluation of magnetic-field distortion caused by eddy-current in shield boxes</td>
<td>Chiba University</td>
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<td>Kodai Shimizu</td>
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<td>0-105</td>
<td>Vascular properties obtained from spin-echo signal fluctuations in the human brain</td>
<td>Hokkaido University</td>
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<td>Minghui Tang</td>
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<td>0-106</td>
<td>Development of a DOI-PET detector “X’tal cube”: optimal position calculation for each optical condition in the scintillation crystal block</td>
<td>National Institute of Radiological Sciences</td>
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<td>Naoko Inadama</td>
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<td>Performance of laser-processed X’tal cube PET detectors with reduced the numbers of SiPM readout surfaces</td>
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<td>Yoshiyuki Hirano</td>
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<td>Optical simulation of a novel DOI detector with a stack of planer scintillators : Impact of surface roughness on spatial resolution</td>
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<td>Akane Gondo</td>
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### 20. Photon/Electron Therapy 9 (Treatment Planning)  14:40–15:50  Moderator: Kazunori Miyaura

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<td>Intrafractional prostate motion using fiduciary gold markers in hypofractionated IMRT</td>
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<td>Minoru Ishigami</td>
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<td>Evaluation method of cumulative dose of organs at risk in head and neck IMRT using deformable image registration</td>
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0-116 Optimization method of beam directions based on similar cases in stereotactic body radiotherapy for lung cancers
Kyushu University Taiki Magome

0-117 Computer-Aided Delineation of Lung Tumor Regions in Treatment Planning CT Images by Localized Level Set Method Combined with PET/CT Images
Kyushu University Ze Jin

0-118 Automated method for monitoring of patient positioning during treatment time based on range images acquired from time-of-flight camera
Kyushu University Mazen Soufi

0-119 Actual method of SBRT for lung cancer in Ogaki Municipal Hospital
Ogaki Municipal Hospital Hitoshi Takagi

0-120 Development of three-dimensional summation method for rectal doses combined with seed implant brachytherapy and external beam radiotherapy for prostate cancer
Iwate Medical University Satoshi Yamaguchi

0-121 Which is better for Patient?
Otsu Red Cross Hospital Makoto Hirata

0-122 Examination of the preliminary-treatment way of the bladder at prostate IMRT
Hitachinaka General Hospital Yoshiyuki Kawasaki

0-181 [Invited Speaker] Magnetic Resonance Imaging Based Treatment Planning for Brain tumor
Chulalongkorn University, Thailand Kittipol Dachaworakul
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22. Particle Therapy 4 (Scanning)  9:00–10:40  Moderator: Takeji Sakae

0-123 Measurement of neutron ambient dose equivalent in carbon-ion radiotherapy with active scanned beam
National Institute of Radiological Sciences  Shunsuke Yonai

0-124 Dependence of dose distortion on the scanning direction in proton beam therapy for a respiratorily moving target
University of Tsukuba Hospital  Satoshi Kamizawa

0-125 Commissioning of moving target irradiation with scanned-ion beam
National Institute of Radiological Sciences  Takuji Furukawa

0-126 Proposal of Intensity Modulated Composite Ion Therapy (IMCIT)
National Institute of Radiological Sciences  Taku Inaniwa

0-127 Development of IMPT optimization algorithm for proton therapy with fiducial markers
Hitachi Research Laboratory  Rintaro Fujimoto

0-128 Beam Technology and Its Stability Verification for Scanning Delivery at NIRS-HIMAC
National Institute of Radiological Sciences  Kota Mizushima

0-129 Report of a biological experiment with scanning beam in GHMC
Gunma University Heavy-Ion Medical Center  Eri Takeshita

0-130 Systematic evaluation of four-dimensional hybrid depth scanning for carbon-ion lung therapy
National Institute of Radiological Sciences  Shinichiro Mori

0-131 A study on a gated proton spot-scanning beam therapy integrated with a real-time tumor-monitoring: an initial phantom study using patient tumor trajectory data
Hokkaido University  Taeko Matsuura

0-132 A comparative study of dose distribution in proton spot scanning and that in patch irradiation
University of Tsukuba  Shohei Mizutani

23. Particle Therapy 5 (Simulation)  14:40–15:40  Moderator: Toshiyuki Toshto

0-133 Evaluation of impurity components of secondary particles generated in particle therapy equipment
Osaka University  Keita Kurosu

0-134 Nuclear Reaction Data for Particle Therapy
Osaka University  Takuma Horaguchi

0-135 Study of proton therapy simulation included effect of secondary particle generated in nuclear reaction
Rikkyo University  Seiichi Tamaki

0-136 A clinical use of Monte Carlo simulation in Nagoya Proton Therapy Center
Nagoya Proton Therapy Center  Chihiro Omachi

0-137 Development of Monte-Carlo dose calculation system based on the XiO® -N treatment planning system at Fukui prefectural hospital proton therapy center
Fukui Prefectural Hospital Proton Therapy Center  Yoshikazu Maeda

0-138 Monte Carlo study on reduction in the secondary neutron exposure in passive carbon-ion radiotherapy
Nagoya University  Akihiko Takeuchi

24. Particle Therapy 6 (Equipment, Treatment Planing)  15:50–17:00  Moderator: Toshiyuki Terunuma

0-139 Treatment planning for scanned charged particle beams - Finding an optimal 4DCT resolution
National Institute of Radiological Sciences  Silvan Zenklusen

0-140 Development of IMPT optimization algorithm for reducing sensitivity to range uncertainties in heterogeneous media
Hitachi Research Laboratory  Shusuke Hirayama
0-141 Development of an in-house program to calculate the monitor unit for proton therapy beam.
Fujita Health University Naoki Hayashi

0-142 Experimental verification of effectiveness of bolus designed using the dose-optimization method
University of Tsukuba Yoshihisa Takada

0-143 A study on simultaneous optimization of boluses for broad beam patch irradiation in proton therapy
University of Tsukuba Ryo Yachidate

0-144 Evaluation of range compensation materials for carbon ion therapy
National Institute of Radiological Sciences Yusuke Koba

0-145 Secondary particle components in carbon-ion beam related to range shifter position
Osaka University Keita Kurosu
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25. Photon/Electron Therapy 11 (Positioning)  9:00–10:10  Moderator: Mitsuhiro Nakamura

0-146  The evaluation of intra-fractional organ motion error and intra-factional setup error in radiation therapy for lung cancer with breath-holding
Aizawa Hospital Proton Therapy Center  Yuya Sugama
0-147  Registration accuracy for lung tumor verified by using in-treatment 4D cone-beam CT
The University of Tokyo Hospital  Akihiro Haga
0-148  Study of radiation treatment planning considering the lung function using 4D-CT ventilation imaging
Tohoku University  Sang Yong Cho
0-149  [Invited Speaker]  Improvement in accuracy of respiratory gated radiation therapy using respiratory guiding system
The Catholic University of Korea, Korea  Seong-Hee Kang
0-150  Development of a deformable lung phantom for quantitatively verifying deformation algorithms
Tohoku University  Yusuke Onozato

26. Photon/Electron Therapy 12 (Brachytherapy)  10:10–11:00  Moderator: Toshiyuki Ogata

0-153  Micro-focus X-ray imaging of I-125 brachytherapy sources for QC
Kitasato University  Tomoyuki Hasegawa
0-154  Development of strength evaluation method of moving sources for brachytherapy (3) Influence by source position and shield by needles
Sapporo Medical University  Kenichi Tanaka
0-155  Three-dimensional dose distribution of Ruthenium 106 brachytherapy for retinoblastoma
The University of Tokyo Hospital  Masahiko Futaguchi
0-156  Reconstruction accuracy of CT/MR applicator for cervix cancer brachytherapy: comparing manual and library modelling in CT imaging
University of the Ryukyus  Hussein ALMasri
0-157  Evaluation of the possibilities of predicting urinary and rectal damage after permanent seed implant
Fujita Health University Hospital  Yasunori Saito

27. Particle Therapy 7 (Others)  11:00–11:50  Moderator: Nobuyuki Kanematsu

0-158  The evaluation of 4D dose distribution used 4DCT for respiratory gated layer-stacking liver treatment.
National Institute of Radiological Sciences  Minoru Nakao
0-159  Design of beam specific target volume for particle therapy using fiducial marker
Nagoya Proton Therapy Center  Toshiyuki Toshito
0-160  Investigation of the range uncertainty in treatment planning caused by imaging with CT simulator
Nagoya City West Medical Center  Hiroki Shibata
0-161  Development of dynamic tumor locating system for accurate proton irradiation
Rikkyo University  Ryouta Noguchi
0-162  Development and verification of Bragg Peak locating system in patient body by proton irradiation
Rikkyo University  Tatsuhiko Suzuki
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28. Radiation Measurement 2 (Gel, TLD)  9:00–10:10  Moderator: Takahiro Tominaga

0-163  LET Dependency of Glow Curve of Tissue Equivalent Phantom Thermoluminescence Dosimeter (TEP-TLD)  
Chiba University  Satoshi Tamatsu
0-164  Usefulness of TL Slab detector of central position detection for CyberKnife Beam  
Tokyo Metropolitan University  Daiki Maruyama
0-165  Characteristics of tissue-equivalent Thermoluminescence and Photoluminescence films  
Juntendo University  Chie Kurokawa
0-166  Investigation of VIPAR polymer gel dosimeter for dosimetric verification in the carbon ion beam therapy (2)  
Nishina Center for Accelerator-Based Science, RIKEN  Takuya Maeyama
0-167  Application of a polyacrylamide gel detector for dose measurements in a proton beam  
Hiroshima International University  Takahiro Tominaga
0-168  The Study of direct calibration on the polymer gel detector's dose response by Gafchromic films  
Hiroshima International University  Mitsutoshi Tada
0-169  Report on the short-term study abroad to RMIT University  
Hiroshima International University  Satomi Nakahara

29. Radiation Measurement 3 (Babble, Scintillator, GM)  10:10–11:10  Moderator: Akihiro Nohtomi

0-170  Development of a real-time dose measurement tool with a plastic scintillator for radiation therapy  
Kitasato University  Katsunori Yogo
0-171  Development of 4-D dosimetry tool using plastic scintillator  
Rikkyo University  Seiichi Tamaki
0-172  Development of a leak survey meter  
Iwate Medical University  Michiaki Sagae
0-173  Application of a superheated drop detector for the estimation of biological effectiveness for C-ion RT  
Yokohama City University  Osamu Yamamoto
0-174  High sensitive neutron-detection by an NaI scintillator (1) — Measurement at a research reactor  
Kyushu University  Akihiro Nohtomi
0-175  High sensitive neutron-detection by an NaI scintillator (2) — Measurement at a clinical linac  
Kyushu University  Eriko Yahiro


0-176  A feasibility study for efficient daily routine using an EPID  
University of the Ryukyus  Akira Funyu
0-177  Development of XiO beam database  
Elekta Japan K.K.  Kazuyuki Wada
0-178  Absorbed dose standard for high-energy photons from a clinical linac  
National Metrology Institute of Japan  Morihito Shimizu
0-179  Dosimeter Calibration with Water Absorbed Dose by ANTM  
Dose Calibration Center, Association for Nuclear Technology in Medicine  Suoh Sakata