

【Joint Sessions for Japan Radiology Congress】

Opening Ceremony: April 17 (Fri) 13:00~14:30 (Main Hall)

Performance: Ensemble Dunamiz

Keynote lecture

President	Kuni Ohtomo (The University of Tokyo) The 74th Annual Meeting of the Japan Radiological Society (JRS)
Conference President	Hiroshi Hirano (Shinshu University Hospital) The 71st Annual Scientific Congress of the Japanese Society of Radiological Technology (JSRT)
Congress Chair	Shinichi Wada (Niigata University) The 109th Scientific Meeting of the Japan Society of Medical Physics (JSMP)
Chairman	Kenichi Komatsu Japan Medical Imaging and Radiological Systems Industries Association (JIRA)

Joint Special Lecture

April 17 (Fri) 14:00~14:30 (Main Hall)

Severe Earthquake Disaster in Tokyo Metropolitan Area and the Gigantic Earthquake Imaged by a Seismic Tomography Method

Moderator: HIMEDIC Imaging Center at Lake Yamanaka/

Emeritus professor of Keio Univ. Sachio Kuribayashi

Earthquake Research Institute, the Univ. of Tokyo Naoshi Hirata

Joint Symposium 1

April 17 (Fri) 15:10~17:10 (Main Hall)

Patient Dose in Radiology: Manage the Invisible

Moderator: Aichi Medical Univ. Tsuneo Ishiguchi

NIRS Keiichi Akahane

1. We Can And We Must Reduce Radiation Exposure Perspective of
The American College of Radiology American College of Radiology, USA Paul H. Ellenbogen
2. Radiation Protection (EUROSAFE IMAGING) University of Crete, Greece John Damilakis
3. Activities for the Management of Medical Radiation Exposure in Japan
Asahi General Hosp. Takayuki Igarashi
4. Should the Radiological Community Continue the Present Radiation
Dose-reduction Campaign and Efforts? Fox Chase Cancer Center, USA Mohan Doss

Joint Symposium 2

April 18 (Sat) 9:50~11:50 (National Convention Hall)

The Importance of Team Care in Radiation Therapy

Moderator: Keio Univ. Naoyuki Shigematsu

Kinki Univ. Hosp. Masahiko Okumura

1. From the Position of Radiation Oncologist

Gunma Univ. Takashi Nakano

2. Radiation Therapy and Medical Physicists in Hokkaido University

Hokkaido Univ. Hosp. Ryusuke Suzuki

3. An Effectiveness and the Present Conditions That the Teamwork Brings at Miyakojima iGRT Clinic

Miyakojima iGRT Clinic Daisaku Tatsumi

4. Connecting Research and Clinical Applications

NIRS Shinichiro Mori

5. The Role of Nurse in Radiation Oncology

National Cancer Center Hosp. Kumi Shimotani

Joint Symposium 3

April 19 (Sun) 9:30~11:50 (Main Hall)

How Should We Face to the Automation Technologies in Radiology?

Moderator: Kyoto Univ. Masahiro Hiraoka

National Cancer Center Hosp. East Teiji Nishio

1. Modeling of Anatomical Structures for Computational Understanding of Medical Images

Hiroshima City Univ. Yoshitaka Masutani

2. Clinical Development of Computer-aided Diagnosis Systems

Yamaguchi Univ. Shoji Kido

3. Research and Development of Computer-Assisted Radiation Therapy Approaches and Their Clinical Applications

Kyushu Univ. Hidetaka Arimura

4. Use of Image Registration for Radiotherapy

Tohoku Univ. Noriyuki Kadoya

Reception for All Participants

April 17 (Fri) 18:15~19:30 (Yokohama Bay Hotel Tokyu B2F Queen's Grand Ballroom)

Closing and Awards Ceremony

April 19 (Sun) 15:00~16:15 (Main Hall)

Performance: JRC Festival Orchestra

Program: Overture for "Die Fledermaus" Radetzky March

【JSMP Program】

(A) Plenary Lectures

- (1) April 17 (Fri) 11:00–11:50 (418, 419)
 Moderator: Kyushu Univ. Hidetaka Arimura
 Importance of Adaptive Response in Cancer Prevention and Therapy
 Invited Speaker: Fox Chase Cancer Center, USA Dr. Mohan Doss
- (2) April 18 (Sat) 11:00–11:50 (418, 419)
 Moderator: Tokyo Metropolitan Univ. Hidetoshi Saitoh
 Addendum to the AAPM's TG-51 Protocol for Clinical Reference Dosimetry of High-Energy Photon Beams
 Invited Speaker: National Research Council, Canada Dr. Malcolm McEwen

(B) Morning Educational Lectures

- (1) April 17 (Fri) 8:15–8:55 (418)
 Moderator: Juntendo Univ. Satoru Sugimoto
 DICOM Basics and Application
 Invited Speaker: JIRA Makoto Suzuki
- (2) April 18 (Sat) 8:15–8:55 (418)
 Moderator: NIRS Shunsuke Yonai
 Basis of Estimations of Radiation Exposures
 Invited Speaker: NIRS Keiichi Akahane
- (3) April 19 (Sun) 8:15–8:55 (418)
 Moderator: NIRS Hideyuki Mizuno
 Introduction to Electromagnetics - Vector Calculus and Maxwell's Equations -
 Invited Speaker: Tokyo Institute of Technology Toshiyuki Kohno

(C) Lunch Time Lectures (Educational Lecture)

- (1) April 17 (Fri) 12:00–12:50 (418, 419)
 Moderator: Osaka Univ. Masao Matsumoto
 High energy resolution spectroscopy with superconducting transition edge sensors
 Invited Speaker: The Univ. of Tokyo Masashi Ohno
- (2) April 18 (Sat) 12:00–12:50 (418, 419)
 Moderator: Niigata Univ. Satoru Utsunomiya
 The Initiation and Assessment of TG-142
 Invited Speaker: Washington Univ., USA Dr. Eric E. Klein
- (3) April 19 (Sun) 12:00–12:50 (418, 419)
 Moderator: Niigata Univ. Shinichi Wada
 Ionizing radiation-induced DNA damage and its cellular responses
 Invited Speaker: NIRS Takeshi Yasuda

(D) The 109th JSMP Symposium

(1) April 18 (Sat) 14:20~17:05 (418, 419)

How to establish clinical training program of medical physicists in Japan?

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|--|---------------------------------------|--------------------------------------|
| | Moderator: NIRS
Niigata Univ. | Kumiko Karasawa
Satoru Utsunomiya |
| 1. Objectives of a Medical Physicist Clinical Training Program (Residency Program) | Washington Univ., USA | Dr. Eric E. Klein |
| 2. Clinical Training of Medical Physicists Specializing in Radiation Oncology | IOMP and Hong Kong Sanatorium & Hosp. | Dr. Kin Yin Cheung |
| 3. Medical physics residency program at University of Tsukuba | Univ. of Tsukuba | Takeji Sakae |
| 4. Medical physics clinical training at Osaka University | Osaka Univ. | Iori Sumida |
| 5. JBMP's policies on Medical Physics Clinical Training | Hokkaido Univ. | Hiroki Shirato |
| 6. General Discussion | | |

(2) April 19 (Sun) 13:00~14:40 (419)

How could we contribute in reducing the lung cancer mortality?

–Facing to CMS decision for lung cancer with low dose CT screening –

- | | | |
|---|---|-----------------------------------|
| | Moderator: National Cancer Center Hosp. East
Niigata Univ. | Hironobu Ohmatsu
Shinichi Wada |
| 1. Current situation and perspective of CT lung cancer screening: trials in Hiroshima prefecture | Hiroshima Univ. | Kazuo Awai |
| 2. A decrease in lung cancer mortality following the implementation of CT screening for general population. | Hitachi General Hosp., Hitachi, Ltd | Takeshi Nawa |
| 3. Current Status and Future Perspectives in Lung Cancer CT Screening CAD system | Gifu Univ. | Hiroshi Fujita |
| 4. Reduction of Lung Cancer Mortality by Disseminating CT Screening: Action as a Medical Physicist | Niigata Univ. | Shinichi Wada |
| 5. Specified Remarks and Discussions | | |

[JSRT-JSMP Joint Session]

(E) How to get Grants-in-Aid, -Research field “Medical Physics and Radiological Technology”

April 18 (Sat) 13:00–14:00 (F201)

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|--|---|---------------------------------|
| | Moderator: Osaka Univ. Hosp.
Osaka Univ. | Tsukasa Doi
Masahiko Koizumi |
| (1) Desirable application from a reviewer's standpoint | Tokyo Metropolitan Univ. | Hidetoshi Saitoh |
| (2) Important things in determining a research theme | Hokkaido Univ. | Masayori Ishikawa |

(3) The survey results for the acquisition of Grants-in-Aid

Osaka Univ. Hosp.

Tsukasa Doi

(4) The present situation and future in university hospital

Kumamoto Univ. Hosp.

Masahiro Hashida

(5) Way to apply the JSPS KAKENHI at a private clinic

Miyakojima iGRT Clinic

Daisaku Tatsumi

[JSMP-JSRT Joint Session]

(F) RPT Doi Awards Ceremony and Winners' Lectures

April 19 (Sun) 12:00–13:00 (Annex Hall; F201)

General Moderator: RPT Editor-in-Chief

Kunio Doi

Moderator: Kyushu Univ.

Junji Morishita

1) Diagnostic Imaging

Moderator: RPT Deputy Editor Sigeohiko Katsuragawa

RPT Vol.7 No.2

Development and evaluation of statistical shape modeling for principal inner organs on torso CT images

Gifu Univ.

Xiangrong Zhou

2) Nuclear Medicine and MR

Moderator: RPT Deputy Editor Tomoyuki Hasegawa

RPT Vol.7 No.2

A method for assessing metabolic information on liver and bone marrow by use of double gradient-echo with spectral fat suppression

Nagoya City Univ. Hosp.

Harumasa Kasai

3) Radiotherapy

Moderator: RPT Deputy Editor

Masahiro Endo

RPT Vol.7 No.1

A formulation of cell surviving fraction after radiation exposure

Hokkaido Univ.

Hiroyuki Date

[JCMP/JASTRO Joint meeting]

(G) Brief meeting of the graduate course and employment for medical physicist

April 18 (Sat) 13:00–14:10 (418)

JSMP Board of Directors

April 16 (Thu) 12:00–17:00 (421)

JSMP General Meeting of Members

April 18 (Sat) 17:10–18:10 (419)

Japanese College of Medical Physics

April 18 (Sat) 18:15–19:15 (419)

Various Committees

April 16 (Thu) –April 19 (Sun)

【General Sessions】 ★ : English Presentation

April 16(Thu) PACIFICO Yokohama Conference Center 418

1. Image (Processing/Analysis/Informatics) and Medical Informatics

13:00–14:00

Moderator: Jun'ichi Kotoku

- ★ **0-001** Investigation of feasibility of an automated approach for retrieval of similar images using PCA in a radiation treatment planning database
Kyushu Univ. Motoki Sasahara
- 0-002** Fast image registration on Multi-GPU computers
Teikyo Univ. Toru Ishibashi
- 0-003** Readout of high resolution DOI for whole-body 3D-PET detector using wavelength shifting fibers
Chiba Univ. Hiroshi Ito
- 0-004** Elimination of metal artifacts in CT images using photon counting semiconductor detector
Hosei Univ. Futoshi Kaibuki
- 0-005** Conversion of digital imaging and communication in medicine image into Stereolithography only using free software for finite element method analysis
Nihon Institute of Medical Science Kazushi Sato
- ★ **0-006** Retrospective analysis of incident reports at a radiology department
Univ. of the Ryukyus Yasumasa Kakinohana

2. Photon/Electron Beam Therapy 1 (Dose Evaluation)

14:10–15:10

Moderator: Hiroyuki Okamoto

- 0-007** Fundamental study for determination of the tolerance of DVH based patient QA metrics for prostate VMAT
Tohoku Univ. Masahide Saito
- ★ **0-008** Development and clinical application of DVH analysis program
Seirei Hamamatsu General Hosp. Yumiko Adachi
- 0-009** A report of beam data check for multi-institutional trial for independent dose calculation verification for the secondary check
Inagi Municipal Hosp. Masanobu Itano
- 0-010** The accuracy in wedge off-axis using independent dose verification
Kitasato Univ. Medical Center Hiroyuki Shimizu
- 0-011** Development of a visual feedback system incorporating a patient-specific guiding waveform using a tablet PC
Tohoku Univ. Yujiro Nakajima
- 0-012** Quantitative estimation of the effect of radiation therapy by using WAM model
Osaka Univ. Yuichiro Manabe

3. Photon/Electron Beam Therapy 2 (CT/CBCT for Treatment Planning)

15:20–16:10

Moderator: Akihiro Haga

- 0-013** Influence of spatial resolution of computed tomography on radiation treatment planning: A feasibility study with pulmonary nodule image simulation
Niigata Univ. Shogo Shigeta
- 0-014** Analysis of the effect of the scattering photon for the accuracy of dose calculation using a cone-beam CT
Juntendo Univ. Keisuke Usui
- 0-015** Clinical evaluation of a metal artifact reduction reconstruction in computed tomography studies used for radiotherapy treatment planning
Fujita Health Univ. Hosp. Yasunori Saito

- 0-016** Evaluation of deformable image registration of pelvic CT image and CBCT image
Tohoku Univ. Kousei Fujiwara
- 0-017** Evaluation of the respiratory change in the automatic image registration using 4D-CBCT
Meiwa Cancer Clinic Hiroyuki Inoue

4. Photon/Electron Beam Therapy 3 (Quality Assurance Techniques)

16:10–17:00

Moderator: Satoshi Kito

- 0-018** A method of focal spot measurement through Flattening-filter free beam on medical linear accelerator
Fukuoka Tokushukai Hosp. Shigeo Anai
- 0-019** Determination of multi leaf collimator positional tolerance using modulation complexity score (MCS) in the volumetric-modulated arc therapy (VMAT) for prostate cancer patients
Tane General Hosp. Kazuki Kubo
- 0-020** Mechanical uncertainty of CyberKnife for metastatic brain tumor patient using Log-file analysis
National Cancer Center Hosp. Hiroyuki Okamoto
- 0-021** Evaluation of dose attenuation by treatment couch
Univ. of the Ryukyus Tsunekazu Kuwae
- 0-022** Research on the relative electron density of a virtual couch
Toho Univ. Sakura Medical Center Teruo Ito

5. Photon/Electron Beam Therapy 4 (Planning and Delivery Techniques)

17:10–18:00

Moderator: Satoru Sugimoto

- 0-023** Variable wedge angle with half fields of an unflattened and a conventional flattened X-ray beam
Shizuoka Cancer Center Tetsuya Tomida
- 0-024** Comparison of Irradiation Time for Breast Treatments Using Electric Tissue Compensation with or without Flattening Filter
Juntendo Univ. Peijiang Lu
- ★ **0-025** Dosimetric Comparison of Field in Field Forward Plan with Bolus Using 20, 25 Fractions and 3DCRT Motorized Wedge without Bolus In Post-Mastectomy Radiotherapy of Breast Cancer
Univ. of Ho Chi Minh, Viet Nam Dang Quang Huy
- 0-026** Dosimetric evaluation of effect of the Jaw Tracking using MLC test patterns
Juntendo Univ. Toru Kawabata
- 0-027** Effects of contour delineating accuracy on dose calculation with TomoTherapy treatment planning system
Kitasato Univ. Daiki Mochizuki

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6. Particle Therapy 1

13:00–14:00

Moderator: Yoshikazu Maeda

- 0-028** Status of Acc-Based BNCT Irradiation System and the Future Prospect
Kyoto Univ. Research Reactor Institute Tooru Kobayashi
- 0-029** Neutron-energy dependence of radio activity distribution induced in a concrete wall used for BNCT irradiation facility
Kyoto Univ. Research Reactor Institute Takushi Takata
- 0-030** Status report of new carbon-ion radiotherapy facility i-ROCK
Kanagawa Cancer Center Shinichi Minohara
- ★ **0-031** A six-year review of more than 11,000 treatment beam results at Southern Tohoku Proton Therapy Center
Southern Tohoku Proton Therapy Center Takahiro Kato

★ : English Presentation

- 0-032** Development of a beam application technique in atmosphere for multi subjects including proton therapy
The Wakasa Wan Energy Research Center Kyo Kume
- 0-033** Discussion of highly accurate dose control
The Wakasa Wan Energy Research Center Fuyumi Ito

7. Particle Therapy 2 **14:10–15:20** **Moderator: Taeko Matsuura**

- 0-034** Patient-specific QA for moving target irradiation with a scanned ion beam
NIRS Yousuke Hara
- 0-035** Advanced evaluation of patient-specific QA for scanned ion-beam therapy
NIRS Yuichi Saraya
- ★ **0-036** Range verification system for the carbon beam gantry at NIRS
NIRS Naoya Saotome
- ★ **0-037** Patient specific QA for proton depth dose distribution using multi-layer ionization chamber in a single-ring wobbling method
Southern Tohoku Proton Therapy Center Takahiro Kato
- 0-038** Patient-Specific QA of Passive proton beam therapy using Range Modulation Wheel
Nagoya Proton Therapy Center Eiki Nikawa
- 0-039** Commissioning of Specialized Proton Beam for Early-Stage Breast Cancer Treatment
Medipolis Proton Therapy and Research Center Naoaki Kondo
- 0-040** Evaluation of the RADPOS 4-D in-vivo dosimetry system for Clinical Application[2]
Univ. of Tsukuba Hidenori Yamaguchi

8. Particle Therapy 3 **15:30–16:30** **Moderator: Kyo Kume**

- 0-041** The Establishment of Quality Assurance Procedures for Spot-Scanning Proton Beam Irradiation System at Hokkaido University
Hokkaido Univ. Hosp. Yuka Matsuzaki
- 0-042** Quality assurance of spot scanning proton beam therapy in Hokkaido University Hospital
Hokkaido Univ. Hosp. Yuto Matsuo
- 0-043** Patient-Specific QA of Spot-Scanning proton therapy
Nagoya Proton Therapy Center Kumiko Asai
- ★ **0-044** Irradiation method for lung and liver cancer and QA using scanning beam: An attempt in Nagoya Proton Therapy Center
Nagoya Proton Therapy Center Toshiyuki Toshito
- ★ **0-045** A Performance of Proton Line Scanning at Aizawa Hospital
Sumitomo Heavy Industries, Ltd. Nagaaki Kamiguchi
- 0-046** Commissioning of the Eclipse Proton™ Treatment Planning System at Aizawa Hospital Proton Therapy Center
Aizawa Hosp. Yuya Sugama

9. Particle Therapy 4 **16:40–17:20** **Moderator: Shinichi Minohara**

- ★ **0-047** Commissioning of real-time tumor-tracking system installed in Hokkaido University Hospital Proton Center
Hokkaido Univ. Hosp. Naoki Miyamoto
- 0-048** An image processing system to track implanted markers in real-time for heavy-ion radiotherapy
Toshiba Corporation Yasunori Taguchi
- 0-049** Commissioning of the On-board Cone-beam CT System Equipped on the Rotating Gantry of a Proton Beam Therapy System
Hokkaido Univ. Hosp. Seishin Takao

- ★ **0-050** Daily dose evaluation utilizing In-room CT positioning system for prostate cancer in proton therapy
Fukui Prefectural Hosp. Yoshikazu Maeda

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10. Photon/Electron Beam Therapy 5 (Registration) 9:10–9:50 Moderator: Satoshi Tanabe

- ★ **0-051** Development of an automated estimation of lung tumor locations for target-based patient positioning in stereotactic body radiotherapy
Kyushu Univ. Beppu Hosp. Satoshi Yoshidome
- 0-052** Development of the positioning assist device in radiotherapy
Ibaraki Prefectural Univ. of Health Sciences Hiraku Fuse
- 0-053** Analysis of Factors for Target Registration Errors using Radiopaque Markers
Kyoto Univ. Masanori Takamiya
- 0-054** Consideration about a location check error using CBCT by the difference between the engineers
Iwate Prefectural Isawa Hosp. Koji Ishita

11. Photon/Electron Beam Therapy 6 (Photon Dose Calculation) 10:00–10:50 Moderator: Fujio Araki

- 0-055** Photon Transport Simulation Using The Numerical Analysis Method of Lattice Boltzmann Equation
Tokyo Metropolitan Univ. Takahito Chiba
- ★ **0-056** Monte Carlo study of VMAT dose distributions from an Elekta Synergy integrating the Agility 160-leaf multileaf collimator
Kumamoto Univ. Ryota Onizuka
- 0-057** The impact of lipiodol on accuracy of dose calculation for stereotactic body radiation therapy
Hiroshima Univ. Hosp. Kazunari Hioki
- 0-058** Study of the influence of the backscatter electrons from high Z-dental alloy on radiation dose distribution using Monte Carlo simulation.
Niigata Univ. Naotaka Kushima
- 0-059** Dosimetric assessment of a metal artifact reduction reconstruction in computed tomography studies used for radiotherapy treatment planning
Fujita Health Univ. Hosp. Yuka Kondo

12. Photon/Electron Beam Therapy 7 (Margins in Treatment Planning)

14:40–15:30 Moderator: Mitsuhiro Nakamura

- ★ **0-060** A calculation framework of anisotropic PTV margins based on a statistical shape analysis of CTV regions for prostate cancer radiotherapy
Kyushu Univ. Yusuke Shibayama
- ★ **0-061** Automated delineation framework of GTV regions using a machine learning classifier based on datasets of planning CT and PET/CT images
Kyushu Univ. Koujiro Ikushima
- ★ **0-062** Differences in structure volumes and dosimetric parameters between treatment planning system and comprehensive software
Osaka Medical Center for Cancer and Cardiovascular Diseases Akira Masaoka
- 0-063** On PTV margin calculation when systematic positioning errors are smaller than random positioning errors
Elekta KK Kiyoshi Yoda
- 0-064** A study of leaf margin for PTV peripheral prescription in lung SBRT
Hiroshima City Asa Hosp. Yasuharu Andou

★ : English Presentation

13. Photon/Electron Beam Therapy 8 (Real Time Tracking and Gating)

15:40–16:50

Moderator: Masayori Ishikawa

- ★ **0-065** Effect of dose distribution by respiratory displacement for VMAT-SRT in lung
Kumamoto Univ. Kazuki Komatsu
- ★ **0-066** Respiratory phase segmentation algorithm based on 3-dimensional fiducial trajectory for real-time tumor-tracking radiotherapy
Hokkaido Univ. Hosp. Naoki Miyamoto
- ★ **0-067** Long term stability of tracking accuracy for dynamic tumor tracking with Vero4DRT system
Kyoto Univ. Mami Akimoto
- ★ **0-068** Development of 4-D QA Suite for the Robotic Radiosurgery System
Miyakojima IGRT clinic Hiroya Shiomi
- ★ **0-069** Predictive modeling of respiratory motion using dynamic linear models
Teikyo Univ. Jun'ichi Kotoku
- ★ **0-070** A real-time prediction and phase recognition of moving tumors based on pre-4DCBCT in radiation therapy: A feasibility study
The Univ. of Tokyo Ritu Bhusal Chhatkuli
- ★ **0-071** Development of database system for inter-fractional organ motion estimated by real-time tumor-tracking radiotherapy system
Hokkaido Univ. Hosp. Ryusuke Suzuki

14. Photon/Electron Beam Therapy 9 (Motion Analysis) 17:00–17:50

Moderator: Takehiro Shiinoki

- 0-072** A FEM based Non-Rigid Registration using boundary condition
Teikyo Univ. Shinobu Kumagai
- ★ **0-073** Evaluation of 3D Tumor Motion and Potential Internal Target Volume of Liver Tumor Using Cine-MRI
Osaka Univ. Yuichi Akino
- 0-074** A phantom study of four-dimensional treatment planning for lung VMAT-SBRT using several reconstructed images
Osaka Univ. Misaki Hashimoto
- 0-075** Evaluation of the 4DCT phase image with two different scanning method
Nagoya Univ. Naoki Suzuki
- ★ **0-076** Improvement of automated monitoring approach of 4D dose distributions during SBRT based on 2D/3D registration with adaptive transformation parameters
Kyushu Univ. Takahiro Nakamoto

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15. Diagnostic Imaging (X-Ray/CT) 1

9:10–10:00

Moderator: Hidetake Hara

- 0-077** Optimization of the breast abdomen X-ray examination conditions in NICU (Perform image evaluation and medical exposure evaluation)
Saga National Hosp. Yukio Inoue
- 0-078** Possibility to detection of the metastatic brain tumor using dual-source dual-energy CT
Kitasato Univ. Hidetake Hara
- ★ **0-079** Development of Energy-resolved Computed Tomography Method for Reducing Adverse Reactions of Iodinated Contrast Media
Kyoto Univ. Hiraku Iramina

- 0-080** X-ray detection using a silicon X-ray diode and a 5.0-m-length coaxial cable
Iwate Medical Univ. Michiaki Sagae
- 0-081** Investigation of a dual-energy computed tomography system utilizing a silicon X-ray diode
Iwate Medical Univ. Hosp. Yuichi Sato
- 16. Diagnostic Imaging (X-Ray/CT) 2** **10:00–10:50** **Moderator: Masaki Ohkubo**
- 0-082** Investigation of a monochromatic X-ray computed tomography system using a microcomputer and a CdTe detector
Iwate Medical Univ. Yasuyuki Oda
- ★ **0-083** Development of a spectral X-ray computed tomography system using a CdTe detector
Iwate Medical Univ. Eiichi Sato
- ★ **0-084** Measurement of X-ray spectra using an LSO-MPPC detector with changes in the MPPC-pixel number
Iwate Medical Univ. Satoshi Yamaguchi
- ★ **0-085** Measurement of X-ray spectra using a YAP(Ce)-MPPC detector and its application to dual-energy computed tomography
Iwate Medical Univ. Eiichi Sato
- ★ **0-086** Low-dark-counting high-speed X-ray energy dispersing using an LSO crystal and a small photomultiplier tube and its application to gadolinium imaging
Iwate Medical Univ. Satoshi Yamaguchi
- 17. Particle Therapy 5** **14:40–15:40** **Moderator: Shigekazu Fukuda**
- 0-087** Performance evaluation of GSO pixel scintillator array for an electron-tracking Compton camera
Tokai Univ. Saki Hirai
- 0-088** A basic study of an electron-tracking algorithm for an electron-tracking Compton camera
Tokai Univ. Kohtarō Iijima
- 0-089** A Study of dose distribution measurement of carbon beam using scintillating glass GEM
NIRS Yusuke Koba
- ★ **0-090** Development of heavy ion CT using an intensifying screen and an EMCCD camera for human head imaging
Kitasato Univ. Hiroshi Muraishi
- ★ **0-091** Development of a whole-body OpenPET
NIRS Taiga Yamaya
- ★ **0-092** First OpenPET imaging of produced ^{15}O ion beams
NIRS Akram Mohammadi
- 18. Particle Therapy 6** **15:50–17:00** **Moderator: Toshiyuki Toshito**
- ★ **0-093** Proton dose calculation using a simplified Monte Carlo algorithm considering the effect of large angle scattering
Hitachi, Ltd., Hitachi Research Laboratory Taisuke Takayanagi
- ★ **0-094** A Monte Carlo investigation of radial dose distribution of electron by proton beam irradiation to gold nanoparticles
Hokkaido Univ. Jihun Kwon
- 0-095** Development of a short range applicator for real-time-image gated proton beam therapy
Hokkaido Univ. Hosp. Taeko Matsuura
- 0-096** Withdrawn
- 0-097** Withdrawn

★ : English Presentation

0-098 Withdrawn

0-099 Quantitative study of skin reaction by carbon beam therapy

NIRS Hiroaki Matsubara

19. Brachytherapy

17:10–18:00

Moderator: Shinji Kawamura

0-100 Development of QA tool for evaluation of dwell position of a source in HDR brachytherapy

National Cancer Center Hosp. Hiroyuki Okamoto

※ : Product Exhibition Coretime: 11:00-11:45, 14:00-15:00

0-101 A survey on dose calculation in treatment planning for brachytherapy

Keio Univ. Takashi Hanada

0-102 Investigation of dosimetry method for brachytherapy by EGS5 and regression to reflect source strength shortage

Hiroshima Univ. Kenichi Tanaka

★ **0-103** Dose distribution of ¹²⁵I-brachytherapy sources using PHITS Monte Carlo code

Kumamoto Univ. Kentarou Tamura

★ **0-104** Inference of Anisotropy function for Ruthenium brachytherapy

The Univ. of Tokyo Masahiko Futaguchi

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20. Nuclear Medicine 1

9:10–10:00

Moderator: Tomoyuki Hasegawa

★ **0-105** Development of layer discrimination method for four-layer DOI detector with laser processed boundaries

Chiba Univ. Akane Gondo

★ **0-106** Development of a singles-based flexible data acquisition system for the OpenPET

NIRS Eiji Yoshida

★ **0-107** Sensitivity Analysis of the Helmet-with-Jaw PET Using Geant4

NIRS Abdella M. Ahmed

★ **0-108** Fast image reconstruction with a Ray-Driven method using a GPGPU

Hosei Univ. Ryo Ito

★ **0-109** Proposed Model of Detector Response Functions using Asymmetric 2D Gaussian Functions and GPU Implementation for the Whole-Body OpenPET

NIRS Hideaki Tashima

21. Nuclear Medicine 2

10:00–10:50

Moderator: Hiroshi Watabe

0-110 A preprocessing filter for SPECT designed to improve high frequency components

Teikyo Univ. Susumu Nakabayashi

★ **0-111** SSIM-based objective image quality metric for nuclear medicine imaging

Osaka Univ. Sachiko Yamada

0-112 Introduction of a traceable Ge-68/Ga-68 point-like source with an acrylic absorber in the novel evaluation and calibration method for PET

Kitasato Univ. Tomoyuki Hasegawa

0-113 Introduction of respiratory gating method on PET/MRI scan

Fukushima Medical Univ. Takamitsu Hara

0-114 Frequency and types of fat-water-shift artifacts on μ Maps in hybrid PET/MR system

Fukushima Medical Univ. Daisuke Shimao

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22. Radiation Protection/Health Physics 1 9:10–10:10 Moderator: Takashi Moritake

- 0-115** Influence on Penetration Situation and Farm Products of the Radiocesium in the Soil in Fukushima
Junshin Gakuen Univ. Shoichi Arai
- ★ **0-116** Dosimetric comparison between four types of computed tomography units
Kumamoto Univ. Takeshi Ohno
- 0-117** Development and utilization of Web-based open system for CT dose calculator, WAZA-ARIV2
NIRS Yusuke Koba
- 0-118** Real-time and Multichannel Patient Dosimeter that used red emission phosphor
Tohoku Univ. Masaaki Nakamura
- 0-119** A study of local diagnostic reference level used image quality in percutaneous coronary intervention
Tohoku Univ. Yohei Inaba
- 0-120** Withdrawn

23. Radiation Protection/Health Physics 2 10:10–10:50 Moderator: Akihiro Nohtomi

- ★ **0-121** CALCULATION OF RADIATION SHIELDING FOR MEGAVOLTAGE GAMMA RAY FACILITY USING MONTE CARLO CODE EGSnrc
115 People's Hosp., Viet Nam Nguyen Thi Cam Tu
- 0-122** Comparison of neutron ambient dose between rem counter WENDI-II and NSN2 in scanning proton therapy
Nagoya Univ. Eri Sekihara
- 0-123** Calculation method of secondary neutron induced dose in proton scanning beam delivery system using aperture
Nagoya Proton Therapy Center Toshiyuki Toshito
- 0-124** Shielding of the secondary neutrons from collimators in proton therapy
Osaka Univ. Masashi Yamanaka

24. MRI 13:00–14:10 Moderator: Tomonori Isobe

- 0-125** Hybrid structure design to reduce metallic artifacts in MRI
Hokkaido Univ. Kazuya Oshinomi
- 0-126** Precise mapping of magnetic field distortion induced by metallic implants: Application of three-dimensional imaging
Hokkaido Univ. Takahiko Kaneda
- 0-127** Dissolved oxygen concentration dependence of the transverse relaxation time
–Feasibility study of in vivo oxygen concentration changes by MRI–
Hokkaido Univ. Yosuke Takano
- ★ **0-128** Improved T1 correction for cardiac-triggered fMRI at ultra-high field
National Institute of Information and Communications Technology Takashi Ueguchi
- 0-129** Respiratory fluctuation in venous blood oxygenation in healthy human body
Hokkaido Univ. Keigo Nishi
- ★ **0-130** Brain arteriolar elastic mapping obtained from magnetic resonance signal fluctuations
– Application to dementia patients –
Hokkaido Univ. Minghui Tang
- 0-131** Influence of patient positioning on RF heating due to metallic implants during MRI examination
Hokkaido Univ. Yu Kikuchi

★ : English Presentation

25. Particle Therapy 7 9:10–10:10 Moderator: Manabu Mizota

- 0-132** A study for precise calculation of monitor unit in passive spreading proton-beam
Nagoya City West Medical Center Yoshiaki Kibe
- 0-133** The calculation of the field size factor using the Clarkson integration method in the MU calculation of proton therapy
Fujita Health Univ. Tetsuhiro Yamakawa
- 0-134** Dependence of field size factor on the off center distance in MU calculation for passive proton therapy
Nagoya Univ. Tomoki Kitagawa
- 0-135** Development of dose-calibration-factor calculation using Clarkson integration for proton therapy using beam-wobbling system
Univ. of Tsukuba Yuki Nagata
- 0-136** A dose correction method for particle radiotherapy using an ultrafast beam scanning system
NIRS Ryohei Tansho
- 0-137** Withdrawn

26. Photon/Electron Beam Therapy 10 (Electron Beam Therapy) 10:20–11:10 Moderator: Hiroshi Oguchi

- 0-138** Development of a dose measurement tool with plastic scintillator for electron beam therapy
Kitasato Univ. Katsunori Yogo
- 0-139** Optimization of Depth Dose Distribution in Electron Beam by Using Degrader
Nagoya Univ. Seira Shimada
- 0-140** Validation of an electron Monte Carlo dose calculation algorithm in clinical condition using EGSnrc and measurements
Kyoto Univ. Hosp. Takahiro Fujimoto
- 0-141** Examination of the depth dose distribution in electron beam irradiation using applicator with a side view mirror
Gifu Univ. Tomohiro Shimozato
- 0-142** Investigation of intraorbital dose distribution in electron beam therapy with Eye Shield
Ise Red Cross Hosp. Akira Kamaya

27. Photon/Electron Beam Therapy 11 (Detector and Dose Evaluation Tools) 13:00–14:00 Moderator: Yuji Nakaguchi

- ★ **0-143** Dosimetric Evaluation of Measurement-Guided 3D Dose Verification System Using Polymer Gel Dosimeter
Hiroshima Heiwa Clinic Kaoru Ono
- 0-144** Impact of the tongue and groove effect using a 2-D diode array for DMLC IMRT verification
Kinki Univ. Hosp. Masakazu Otsuka
- 0-145** Comparison of three-dimensional diode detector and two-dimensional in VMAT dose verification
Hyogo College of Medicine College Hosp. Tsukasa Wakayama
- 0-146** Commissioning of Delta^{4DVH} Anatomy software
Chiba Cancer Center Ryohei Miyasaka
- 0-147** Basic property of MID-SOF detector in radiotherapy field
Teikyo Univ. Ryohei Uemura
- 0-148** Effects on the dose distribution due to aging of gafchromic film (EBT3)
Institute of Biomedical Research and Innovation Hosp. Sho Taniuchi

28. Photon/Electron Beam Therapy 12 (Dose Measurement/Others)

14:00–14:50

Moderator: Takeshi Ohno

- 0-149** Temperature characteristics of Farmer dosimeter in water
Tsukuba Medical Center Hosp. Yuichi Kato
- 0-150** Study of ion recombination factor of a small radiation field and small ionization chambers in Flattening-Filter-Free (FFF) Photon Beams
Asahikawa Medical Univ. Hosp. Hideki Hayashi
- 0-151** Study of the Effect of the Source to Surface Distance Scaling for Large Fields on Beam Data Modeling
Juntendo Univ. Satoru Sugimoto
- 0-152** Evaluation of Image Quality and Dose for Megavoltage Computed Tomography on Tomotherapy Unit with the Change of Jaw Size
Shonan Kamakura General Hosp. Hironori Nagata
- ★ **0-153** Visualization of the treatment area in helical tomotherapy system
The Univ. of Tokyo Hosp. Akihiro Haga

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29. Detector and Dose Measurement Tools 1

9:00–9:50

Moderator: Yusuke Koba

- ★ **0-154** Development of ultra-miniature dosimeter for diagnostic X-ray with invisibility in fluoroscopic X-ray image
Hokkaido Univ. Masayori Ishikawa
- ★ **0-155** Monte Carlo simulation of gamma-ray response of CeBr₃ scintillation detector
Osaka Univ. Taku Nakaji
- 0-156** Development of a 360 degree panorama Compton camera using CsI(Tl) scintillator
Kitasato Univ. Takara Watanabe
- 0-157** Development of a Compton Camera “ γ ” Using CsI (Tl) Crystals
Ibaraki Univ. Mika Kagaya
- 0-158** Reduction of readout channels by 3D resistor networks for X’tal cube PET detector
Tokyo Institute of Technology Hiromu Aoshima

30. Detector and Dose Measurement Tools 2

10:00–11:00

Moderator: Chie Kurokawa

- 0-159** Backscatter Factors of Various Materials for Diagnostic X-rays
Tokyo Metropolitan Univ. Tsuguhisa Katoh
- ★ **0-160** Development of attenuation coefficient reconstruction algorithm with high accuracy
The Univ. of Tokyo Hosp. Dousatsu Sakata
- 0-161** Examination of two-dimensional dose distribution measurement with Al₂O₃ ceramics TL slab in water phantom
Tokyo Metropolitan Univ. Shin Yanagisawa
- 0-162** Preliminary study of a bolus employing the polymer gel in breast radiation therapy
Tsukuba Medical Center Hosp. Kazuya Shinoda
- 0-163** Fundamental examination of the electron beam quality control using Cherenkov radiation
Seirei Mikatahara General Hosp. Kengo Sugimoto
- 0-164** Four-dimensional dose distribution measurement using plastic scintillator and cooled CCD camera
The Cancer Institute Hosp. Masatoshi Hashimoto

★ : English Presentation

31. Detector and Dose Measurement Tools 3

11:00–11:50

Moderator: Hideyuki Mizuno

- 0-165** Development of a separated calibration system for electrometer and ionizing chamber (1): Standard electrometer
Association for Nuclear Technology in Medicine Nobuhiro Takase
- 0-166** Development of a separated calibration system for electrometer and ionizing chamber (2): Charge for comparative calibration
Association for Nuclear Technology in Medicine Nobuhiro Takase
- ★ **0-167** Study on stem and cable leakage of ionization chamber
Tokyo Metropolitan Univ. Ryohei Yamauchi
- ★ **0-168** Changes in absorbed dose to water evaluation caused by shift from JSMP01 to JSMP12
Tokyo Metropolitan Univ. Mitsunobu Igari
- 0-169** Calibration of the ionization chamber dosimeter by high-energy photon beam
Hiroshima Univ. Tatsuhiko Suzuki