

【General Session】

April 15 (Thu.) 418

Radiation Therapy (Particle): Proton and BNCT

15:00–15:50

Moderator: Hideyuki Takei

- 0-001 Improvements of lateral penumbra widths for various optimized parameters in proton pencil beam scanning with and without a multi-leaf collimator.
Osaka Proton Therapy Clinic Yuki Tominaga
- 0-002 Fundamental study on the effects of activated dental metal in proton therapy for head and neck cancer
Southern Tohoku Proton Therapy Center Ryohei Kato
- 0-003 Evaluation of the angular distribution of produced light in water during high-energy proton irradiation.
Nagoya University Hiroto Ushiba
- 0-004 Dose measurements for biological experiments using synchrotron-based ultra-high dose rate proton beam in Nagoya Proton Therapy Center
Nagoya Proton Therapy Center Chihiro Omachi
- 0-005 Hybrid dose calculation algorithm for BNCT based on a combination of Monte Carlo and superposition methods
Kyoto University Takushi Takata

Radiation Therapy (Particle): Proton and Heavy Ion

16:00–17:00

Moderator: Naoki Hayashi

- 0-006 Preparation of East Japan Heavy Ion Center, Faculty of Medicine, Yamagata University
Yamagata University Takeo Iwai
- 0-007 Treatment of large tumor for patch-field technique with a beam wobbling method
SAGA HIMAT Foundation Takeshi Himukai
- 0-008 Clinical evaluation of RBE-weighted dose and dose-averaged LET in patients receiving carbon-ion radiotherapy for head and neck adenoid cystic carcinoma
National Institute of Radiological Sciences Ryosuke Kohno
- 0-009 Development of markerless volumetric imaging technique using dual X-ray fluoroscopy
Hokkaido University Suzuka Asano
- 0-010 Feasibility study of MRI-guided proton therapy system
Hokkaido University Yusuke Fujii
- 0-011 Evaluation of distorted lateral beam profiles in MRI-guided proton therapy
Hokkaido University Hideaki Ueda

Radiation Therapy (Particle): Heavy Ion

17:10–18:00

Moderator: Mutsumi Tashiro

- 0-012 Log-data based patient specific quality assurance for heavy-ion therapy
Osaka Heavy Ion Therapy Center Masaaki Takashina
- 0-013 Approximated simulation of carbon ion radiotherapy for moving target to validate condition and strategy on Osaka-HIMAK
Osaka Heavy Ion Therapy Center Noriaki Hamatani

- 0-014 Overview of carbon ion radiotherapy for prostate cancer using fiducial markers in Osaka HIMAK
Osaka Heavy Ion Therapy Center Toshiro Tsubouchi
- 0-015 The effectiveness of prostate-matching using in-room CT in carbon ion radiotherapy for prostate tumor without fiducial markers.
Osaka Heavy Ion Therapy Center Yushi Wakisaka
- 0-016 Development of the dose optimization algorithm considering the sublethal damage repair due to interruption in carbon ion radiotherapy.
Osaka University Nao Okada

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Radiation Therapy (Photon/Electron): QA and Others

9:00–10:00

Moderator: Satoru Sugimoto

- 0-017 Superficial dosimetry by Cherenkov emission in comparison to film dosimetry
National Cancer Center Hospital Hiroyuki Okamoto
- 0-018 Effect of grid size on dose distribution verification with a two-dimensional diode detector for small irradiation field
Fujita Health University Hospital Yasunori Saito
- 0-019 Development of a versatile patient-specific QA phantom that also supports non-coplanar beams
Gifu Prefectural Tajimi Hospital Shigeyoshi Kamada
- 0-020 Off-axis Winston-Lutz test for a single-isocenter stereotactic irradiation in L-shape linac
Kyoto University Takahisa Kido
- 0-021 Development of vascular dynamic phantom.
Tokyo Metropolitan University Yuki Mitsui
- 0-022 Investigation of optimal physical density derivation when using solid phantom
Aomori Rosai Hospital Koji Ishita

Radiation Therapy (Photon/Electron): Brachytherapy and Others

10:00–10:50

Moderator: Toru Kojima

- 0-023 Plan quality assessment for inter-observer error of applicator reconstruction in brachytherapy using in-house application
Tokyo Metropolitan University Mihiro Takemori
- 0-024 Dosimetric effects of air pockets around vaginal cylinder in HDR-Brachytherapy with heterogeneity corrected dose calculation
National Cancer Center Hospital Takahito Chiba
- ★ 0-025 Simple evaluation of the accuracy of irradiation position for single isocenter multiple target stereotactic radiotherapy
Fujita Health University Shun Kurata
- ★ 0-026 IMRT verification by three-dimensional dose distribution measurements using cylindrical plastic scintillator and CCD camera
Kitasato University Yuichi Tanaka

Radiation Therapy (Photon/Electron): SBRT

11:00–11:50 Moderator: Motohiro Kawashima

- ★ 0-027 A treatment planning study comparison between spine or prone position according to the lung tumor site in CyberKnife.
Kobe Minimally Invasive Cancer Center Hiroaki Akasaka
- 0-028 Optimal CT image reconstruction method for dose calculation of stereotactic irradiation planning of lung tumors with respiratory movements
Niigata University Tomoya Abe
- ★ 0-029 Experimental study of the dose distribution in the phase and amplitude gating lung SBRT with the baseline shift
Ibaraki Prefectural University of Health Sciences Kenji Yasue
- 0-030 Deviations in dose distribution due to tracking errors in the treatment of shrunken lung tumors
Nagoya University Motoki Kumagai
- 0-031 Development of quantitative evaluation method for respiratory stability using correlation dimension analysis
Shinshu University Hospital Yusuke Kojima

April 17 (Sat.) 418

Image Informatics/Medical Information/Education: Image Informatics and Medical Information

9:00–9:50

Moderator: Taiki Magome

- 0-032 Detecting pulmonary hypertension using chest x-ray image by convolutional neural network
Teikyo University Takumasa Tsuji
- ★ 0-033 An initial study on predicting prognosis of patient in CCU from electrocardiogram using convolutional neural network
Fujita Health University Ami Suzuki
- ★ 0-034 Effect of dose calculation algorithms in lung stereotactic body radiation therapy on wavelet-based dosiomic features
Kyoto University Takanori Adachi
- ★ 0-035 Estimation of tumor growth trajectories during TKI targeted therapy based on Gompertz model
Kyushu University Gia Huy Truong
- 0-036 Effect of contrast on the spatial resolution of Deep Learning Image Reconstruction images in the scan plane and slice direction
Tokyo Women's Medical University Medical Center East Shingo Harashima

Diagnostic Imaging (X-ray)/Magnetic Resonance/Diagnostic Imaging (others):

Diagnostic Technology

10:00–10:50

Moderator: Yoshiyuki Nyui

- 0-037 Evaluation of image quality by various image reconstruction methods in head CT using the acute-stage cerebral infarction phantom model
Kitasato University Hidetake Hara
- 0-038 The geometric arrangement of X-ray tubes for the biplane Angio-Tomosynthesis
Kyorin University Kensuke Hori

- ★ 0-039 Development of a low-energy photon transportation code with a GPU
Hosei University Shota Sezai
- ★ 0-040 Electromagnetic simulation analysis of an RF burn injury case on a tattoo
Hokkaido University Kaito Yamashita
- 0-041 Development of 808-nm-peak high-spatial-resolution near-infrared-ray laser computed tomography
Iwate Medical University Uchimaru Medical Center Yuichi Sato

Radiation Therapy (Photon/Electron): AI and Treatment Planning

15:50–16:50 Moderator: Masahiko Kurooka

- 0-042 Predictive translation of oblique images into frontal and lateral images using Deep Learning for CyberKnife system.
Nagoya University Hospital Toshiki Kato
- 0-043 Evaluation of auto-segmentation accuracy by cloud-based AI and atlas-based model for prostate cancer
Tokyo Metropolitan University Yuka Urago
- 0-044 Deep learning-based detection and classification of MLC modeling errors in VMAT patient-specific QA
Niigata University Sae Nakamura
- 0-045 Evaluation of accuracy in CBCT-based adaptive plan for head and neck radiation therapy
Kobe University Ai Nakaoka
- 0-046 Dosimetric characteristics at the surface with metallic and plastic biliary stents in external beam radiotherapy
Osaka International Cancer Institute Yoshihiro Ueda
- ★ 0-047 Withdrawn

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Radiation Therapy (Photon/Electron): Monte Carlo

9:00–9:40 Moderator: Yukio Fujita

- 0-048 Photon source model based on particle transport in a parameterized accelerator structure for Monte Carlo dose calculations of FFF beams
Tohoku University Suguru Dobashi
- ★ 0-049 Determination of scaling factors of a newly water-equivalent phantom for electron beam using Monte Carlo simulation
Ibaraki Prefectural University of Health Sciences Koichi Hanada
- ★ 0-050 Comprehensive evaluations of an analytical kilovoltage cone-beam CT source model for Monte Carlo dose calculations
Komazawa University Kyohei Fujii
- ★ 0-051 Evaluation of shielding calculation accuracy and optimization simulation of shielding wall using monte carlo-based simulations in tomotherapy.
Takarazuka City Hospital Keisuke Sano

Radiation Measurement/Radiation Protection: Radiation Measurement 1

9:50–10:40

Moderator: Toru Kawachi

- 0-052 A calibration service based on a Japanese primary standard of absorbed dose to water in a high-energy electron beam
National Metrology Institute of Japan, AIST Morihito Shimizu
- ★ 0-053 Dosimetry with an ionization chamber calibrated by a standard of absorbed dose to water in a high-energy electron beam
National Metrology Institute of Japan, AIST Morihito Shimizu
- 0-054 Response of a diode detector on the buildup dose measurement in inline magnetic fields
Kumamoto University Naoki Anami
- 0-055 Dose-distribution measurement in the treatment plan of CyberKnife using two-dimensional poly(vinyl alcohol)-iodide gel dosimeter
National Cancer Center Hospital Kotaro Iijima
- 0-056 Investigating the effect of glass on UVC Cameras using Monte Carlo simulation
Tokyo Metropolitan University Kengo Miyazaki

Radiation Measurement/Radiation Protection: Radiation Measurement 2

10:50–11:50

Moderator: Hiroaki Matsubara

- 0-057 Measurement of absorbed dose to water at the phantom surface using a semiconductor detector for diagnostic kilovoltage x-ray beams
Kumamoto University Ryuki Tanabe
- 0-058 A fundamental study of dose-rate dosimeter for X-ray CT scanner using silicon X-ray diode
Iwate Medical University School of Medicine Satoshi Yamaguchi
- ★ 0-059 Optimization of the laser-induced layer in scintillation crystal bars for PET detectors with DOI
NIRS, QST Akram Mohammadi
- 0-060 Ion recombination and polarity correction factors for different types of ionization chambers in proton pencil beam scanning
Tsuyama Chuo Hospital Takayasu Haruna
- 0-061 Time-varying track imaging of carbon ion beam with optically readout glass gas electron multiplier
Teikyo University Keisuke Maehata
- ★ 0-062 An experiment for characteristic confirmation of a remote changeable Bonner sphere spectrometer for boron neutron capture therapy
Kyoto University Sadaaki Shiraishi

【JSRT-JSMP Joint International Session Oral】

April 15 (Thu.) 501

Nuclear Medicine-1 14:00–14:50 **Chairman: Keichi Magota
Go Akamatsu**

- ★ (T) IS-001 Application of CNN Whether to Occurrence of Cold Region in the Evaluation of Uniformity in Nuclear Medicine QC
Shingu College, Korea Young-Sang Kim
- ★ (T) IS-002 4D Branch Network: CNN-Based Dynamic PET Image Denoising Without Prior Training Dataset
Hamamatsu Photonics K.K. Fumio Hashimoto
- ★ (T) IS-003 Evaluation of Super-resolution of PET Images Using Generative Adversarial Network
Hokkaido University Kentaro Nishigami
- ★ (T) IS-004 Estimation of 10-minute Acquired Images from 5-minute Acquired Images Using Deep Learning in 18F-FDG Dynamic Brain PET Scan
Hokkaido University Mui Saito
- ★ (T) IS-005 Comparing O-15 Labeled Oxygen Metabolism Among Three Databases
Iwate Medical University Toshiaki Sasaki

Diagnostic Technology-1 14:55–15:35 **Chairman: Toru Yamamoto
Hiroyuki Takashima**

- ★ (T) IS-006 Validation and Reproducibility Study on Semi-automatic Quantification Software for MR Elastography of the Liver
Hokkaido University Yuri Katsuumi
- ★ (P) IS-007 Different Tissue Suppression Techniques Used for Breast Implants in Magnetic Resonance Imaging
Tuen Mun Hospital, Hong Kong Li Xiao
- ★ (P) IS-008 Hypoxic-cancer Visualization Using Meglumine-gadopentetate-glucose Solution and 7.0-T Magnetic Resonance Imaging
Iwate Medical University Eiichi Sato
- ★ (P) IS-009 Triple-sensitivity High-spatial-resolution X-ray Computed Tomography Using a 0.1-mm-focus Tube and Its Beam-hardening Effect
Iwate Medical University Eiichi Sato

Radiation Protection-1 15:40–16:30 **Chairman: Shinnosuke Matsumoto**

- ★ (P) IS-010 Evaluation of Neutron Ambient Dose Equivalent in Intensity Modulated Composite Particle Therapy
NIRS, QST Shinnosuke Matsumoto
- ★ (P) IS-011 Characterization of Radio Waste and Radiation Dose Assessment of TRIGA Mark-II Research Reactor in Bangladesh
Gono Bishwabidyalay (University), Bangladesh S M Fahad
- ★ (P) IS-012 Determination of the Elemental Concentration of Bangladeshi Medicinal Plants Using the Proton-induced X-ray Emission Technique
Gono Bishwabidyalay (University), Bangladesh S M Fahad

★ Ⓟ IS-013 Withdrawn

★ Ⓟ IS-014 An Attempt to Reduce the Background ESR Signal in Human Fingernails for
Monitoring Accidental Hand Exposures
Hiroshima University Chryzel Angelica B. Gonzales

Raditaion Measurement: Photon 16:35–17:15 Chairman: Makoto Sakama

★ Ⓟ IS-015 Evaluation of TRS-483 Protocol for the Dosimetry of Small Static Fields for C-arm and
O-ring Linear Accelerators

Kyoto University Hospital Kohei Kawata

★ Ⓟ IS-016 Small Field Dosimetry Using a Roos-type Ionization Chamber
Komazawa University Masakatsu Takeda

★ Ⓟ IS-017 Beam Quality Conversion Factor and Dose Linearity of Optically Stimulated
Luminescence Dosimeter (OSLD) for High-energy Photon Beam
Kanazawa University Sota Goto

★ Ⓟ IS-018 Enhancing Cherenkov Light Yield by Gold Implants
University of Minnesota, USA Keita Okazaki

Radiotherapy: Brachytherapy and Others 17:20–18:10 Chairman: Iori Sumida

★ Ⓟ IS-019 Development of a Simultaneous Imaging System Made of a Gamma Camera and a CCD
Camera for High-dose-rate Brachytherapy

Nagoya University Jura Nagata

★ Ⓟ IS-020 Source Position Measurement by Cherenkov Emission Imaging from Applicators for
High-dose-rate Brachytherapy

Nagoya University Katsunori Yogo

★ Ⓟ IS-021 Development and Feasibility of a Simple Portable Body Surface Monitoring Device
Using an Infrared Camera in Radiotherapy

Fujita Health University Riki Oshika

★ Ⓟ IS-022 Localization Accuracy of Off-isocenter Targets for Brain Stereotactic Radiotherapy
Using SyncTraX FX4

Juntendo University Jun Tomihara

★ Ⓟ IS-023 X-ray Scattering Estimation with Spherical Harmonics in Cone-beam Computed
Tomography

Tokushima University Taisei Shimomura

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Raditaion Measurement: Particle 8:00–8:50 Chairman: Hiroaki Kumada

★ Ⓟ IS-024 The Activation Properties of CaI₂ Crystal on Neutron Detection by the Self-activation
Method with an Iodine-containing Scintillator

Kyushu University Hideya Maeda

★ Ⓟ IS-025 An Evaluation of Quenching Effects and an Analysis of a Long Half-life Component for
Neutron Measurement with Iodine-added Liquid Scintillator

Kyushu University Naoya Sakamoto

- ★ (P) IS-026 Evaluation of the Position Resolution of a Prompt Gamma-ray Imaging Detector with an Arrayed LaBr₃(Ce) Scintillator and MPPC for BNCT
Kyoto University Keita Okazaki
- ★ (P) IS-027 Evaluation of Internal Exposure Effect in Consideration of Internal Activation During Boron Neutron Capture Therapy
Kyoto University Ryosuke Narita
- ★ (P) IS-028 Responses of the PVA-GTA-I Gel Dosimeter to Therapeutic Carbon Ion Beams
Hiroshima University Jolan E. Taño

Particle Therapy: Carbon Ion**9:00–9:50****Chairman: Ryosuke Kohno**

- ★ (P) IS-029 Evaluation of Radiation Quality Variation for Broad Beam Method of Carbon Ion Radiotherapy
Gunma University Katsuki Narumi
- ★ (P) IS-030 Radial Let Measurements for Therapeutic Carbon Pencil Beam
Gunma University Heavy Ion Medical Center Akihiko Matsumura
- ★ (P) IS-031 Development of High-speed Dose Calculator for Evaluation of Robustness of Carbon Ion Radiotherapy
Osaka Heavy Ion Therapy Center Hiroya Shiomi
- ★ (P) IS-032 Development of Log File Based Monte Carlo Calculation Method for Patient-specific QA in Carbon-ion Radiotherapy
Toho University Yohei Souma
- ★ (P) IS-033 A Monte Carlo Study of Physical Dose Perturbation of Carbon Ion Beam in Water with Gold Anchor.
QST Hospital, QST Taku Nakaji

Particle Therapy: Evaluation**10:00–10:50****Chairman: Toshiyuki Toshito**

- ★ (P) IS-034 Filtering and Gridless Approach: Imaging Dose Reduction for Real-time-image Gated Particle Therapy
Osaka University Masashi Yagi
- ★ (P) IS-035 Development of Anatomical Change Monitoring System Using Two-dimensional X-ray Image for Adaptive Radiotherapy in Head and Neck Region
National Cancer Center Hospital East Kouta Hirotaki
- ★ (P) IS-036 Inclusion of Energy Layer Structure into an Evaluation of Dose Delivery Time Effect in Scanning Proton Therapy
Hokkaido University Koki Kasamatsu
- ★ (P) IS-037 A Method for Evaluating the Achievement Probabilities of Prescribed Dose Criteria Under Arbitrary Respiratory Motion in Particle Therapy
Hokkaido University Kouhei Yokokawa
- ★ (P) IS-038 Study of EUD Estimation Using Machine Learning from Small Data as Pre-screening Tool Prior to MBA for PBT Patient Selection
Hokkaido University Sira Jampa-ngern

Medical Information and Education**15:40–16:10****Chairman: Makoto Sakai
Hiroaki Hayashi**

- ★ (T) IS-039 Study of Change of the Radiological Inspection by COVID-19
Hanseu University, Korea Da Som Baek

- ★ Ⓟ IS-040 Prediction of Prostate Cancer Recurrence Using Machine Learning Models Developed with Extrapolation Data

Komazawa University Kouhei Oguma

- ★ Ⓟ IS-041 South Asia Centre for Medical Physics and Cancer Research (SCMPCR): A Centre of Excellence to Fight Against Cancer

South Asia Centre for Medical Physics and Cancer Research, Bangladesh

Hasin Anupama Azhari

Image Informatics

16:20–17:00

Chairman: Jun'ichi Kotoku

- ★ Ⓟ IS-042 Multi-material Decomposition Based on Neural Network

Tokushima University Daiyu Fujiwara

- ★ Ⓟ IS-043 Denoising and Contrast Enhancement of MVCT Using Deep Learning-based Methods

The University of Tokyo Hospital Sho Ozaki

- ★ Ⓟ IS-044 Radiogenomic Imaging Biopsy for EGFR-Mutated Patients with Non-small Cell Lung Cancer Based on Contrast CT Images Using Invariant Betti Numbers

Kyushu University Kenta Ninomiya

- ★ Ⓟ IS-045 Prediction of the Position of External Markers on the Chest and Abdomen for Latency Compensation in Radiotherapy

The University of Tokyo Michel Pohl

CT: Image Quality

17:10–18:00

Chairman: Katsumi Tsujioka

Masatoshi Kondo

- ★ ⓧ IS-046 Investigating the Feasibility of Generating Dual-energy CT from One 120-kVp CT Scan for Quantitative Image Analysis: A Phantom Study

Kaohsiung Medical University, Taiwan Ching-Ching Yang

- ★ ⓧ IS-047 De-noising the Axial Image of Dynamic Computed Tomography Perfusion Using Singular Value Decompositionbased Approach

Dongseo University, Korea Chunggeun Oh

- ★ ⓧ IS-048 Improvement of the Visibility of HCC Lesions in CT Images by Optimally Colorization Based on the Differences in Chromaticity

Kyushu University Hospital Hiroshi Akamine

- ★ ⓧ IS-049 A Novel Human Body Tray for Postmortem Imaging Adapted for CT and MRI

Kyorin University Tomoaki Yamamoto

- ★ Ⓟ IS-050 Elucidation of Effects of Tube-current Modulation on Three-dimensional Dose Distribution from Low Pitch Helical Scans

Teikyo University Yuuki Ogata

CT: Machine Learning

18:10–19:00

Chairman: Katsuhiko Ichikawa

Shinichiro Mori

- ★ ⓧ IS-051 Weakly Supervised Classification Scheme of Idiopathic Interstitial Pneumonia Using Attention-based Deep Multiple Instance Learning

Fujita Health University Nonoko Takeuchi

- ★ ⓧ IS-052 Sketch Based Lung Cancer CT Image Generation Using Pix2pix Toward the Generation of Rare Disease Images

Fujita Health University Ryo Toda

- ★ ⓧ IS-053 A Performance Evaluation of Deep Learning Based Image Denoising for Ultra-low

Dose CT

- ★ ① IS-054 Prediction of Lung Cancer Prognosis Using Feature Extraction by Convolutional Neural Network and Machine Learning
Juntendo University Keisuke Usui
- ★ ② IS-055 Estimation of CT X-ray Spectrum from Reconstructed Images Using a Deep Neural Network
Fujita Health University Yuki Oshita
Tokushima University Takayuki Higuchi

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**Radiotherapy: Treatment Planning 8:00–8:50 Chairman: Noriyuki Kadoya
Masatoshi Hashimoto**

- ★ ③ IS-056 Quantification of Uncertainty Associated with Image Registration of MR-CT for Prostate Radiotherapy: Rationale for MR Alone Radiotherapy
Yashoda Cancer Institute, Yashoda Hospitals, India Arivarasan Ilamurugu
- ★ ④ IS-057 Validation of Robust Optimization Approach of VMAT Treatment Planning of Stereotactic Body Radiation Therapy of Lung Cancer
BP Koirala Memorial Cancer Hospital, Nepal Tirthraj Adhikari
- ★ ⑤ IS-058 Impact of Different Computed Tomography Datasets on VMAT Dose Calculations for Lung Tumor in Magnetic Fields
Kumamoto University Takeshi Ohno
- ★ ⑥ IS-059 In Vivo Dose Calculation in Spine SBRT Based on CBCT Image Acquired During VMAT Delivery: First Clinical Case
Kyoto University Hospital Hiraku Iramina
- ★ ⑦ IS-060 Comparison of Dose Distribution on TPS According to the MLC Speed Variation in VMAT
Choonhae College of Health Sciences, Korea Yonlae Kim

Radiotherapy: Miscellaneous 10:00–10:50 Chairman: Mitsuhiro Nakamura

- ★ ⑧ IS-061 Development of AI-based Prediction Models in Real-time Tumor Tracking Radiotherapy
Kyoto University Dejun Zhou
- ★ ⑨ IS-062 Evaluation of Machine Learning-based Prediction Model with Combination of Conventional and Functional Dosimetric Parameters for Radiation Pneumonitis in NSCLC Patients
Tohoku University Shiina Mouri
- ★ ⑩ IS-063 Development of Prognostic Prediction Method with the Novel Radiomic Feature Based on Graph Theory
Tohoku University Mariko Umeda
- ★ ⑪ IS-064 Evaluation of Complexity of VMAT Plans Using Radiomic Features of 3-dimensional Dose Distributions and Its Correlation to Gamma Passing Rate
Niigata University Natsuki Ishizaka
- ★ ⑫ IS-065 Comprehensive Risk Management Using FMEA in MR Image Guided On-line Adaptive Radiation Therapy
National Cancer Center Shie Nishioka

Nuclear Medicine-2 **11:00–11:40** **Chairman: Tomoyuki Hasegawa**

- ★ Ⓟ IS-066 Experimental Verification of the Effect of the Full-ring Geometry in WGI Compton Imaging
NIRS, QST Hideaki Tashima
- ★ Ⓟ IS-067 Can Biological Washout Rate Be a Biomarker of Tumor Viability in Charged Particle Therapy? A Rat In-beam PET Study
Tokyo Women's Medical University Chie Toramatsu
- ★ Ⓟ IS-068 Noninvasive Probing of Oxygen Partial Pressure Using Positronium Atom and Its Application in PET
The University of Tokyo Kengo Shibuya
- ★ Ⓟ IS-069 Dual Round-edge Detector Arrangement for Breast PET: A Proof of Concept Study
NIRS, QST Go Akamatsu

Radiotherapy: Prediction **13:30–14:00** **Chairman: Taiki Magome**

- ★ Ⓣ IS-070 Deep Learning-Based Prediction of Radiation Pneumonitis After Lung Cancer Stereotactic Body Radiation Therapy
Kyushu University Hospital Taka-aki Hirose
- ★ Ⓣ IS-071 Prediction of Therapeutic Outcomes for Patients with Non-small Cell Lung Cancer Who Received Stereotactic Ablative Radiotherapy
Kyushu University Mai Egashira
- ★ Ⓣ IS-072 Radiomics Prediction for Progression in NSCLC Patients Treated with Stereotactic Body Radiation Therapy
Kyushu University Takumi Kodama

Diagnostic Technology-2 **14:10–14:50** **Chairman: Tomoaki Yamamoto**
Yuka Matsuura

- ★ Ⓣ IS-073 Determination of the Angle of X-ray Incidence Using a Correction Angle Estimation Formula for Re-photography of the Patella
Koga General Hospital Tomoki Kinoshita
- ★ Ⓣ IS-074 Association of Twinkling Artifacts According to the Composition of Urinary Stone in Color Doppler Examination
Hanseu University, Korea Min Ji Kim
- ★ Ⓣ IS-075 Retrospective Comparison of DXA and QCT Follow-up of Lumbar Spine: A Study with 17 Patients with Suspected Rheumatoid Arthritis
Hokkaido University Sara Nakagawa
- ★ Ⓣ IS-076 A Study on the Possibility of Detection of Airway Aspiration Using NIR Scanner During the Assessment of Dysphagia
Dongseo University, Korea Seung-Min Hwang

MRI: Diffusion Weighted Image **15:00–15:30** **Chairman: Yasuo Takatsu**
Kenichiro Yamamura

- ★ Ⓣ IS-077 Analysis of Dynamic ADC Change During Cardiac Cycle of the Brain Using Bulk-motion-compensated Diffusion Encoding
Kanazawa University Riho Okamoto
- ★ Ⓣ IS-078 Validation of a New Imaging Strategy with Gd-EOB-DTPA to Identify Whether the

DWI at Both Low and High Bvalues Should Be Affected in Patients with Hepatic Lesions

Sichuan University, China Hehan Tang

- ★ ① IS-079 The Value of Intravoxel Incoherent Motion and Diffusion Kurtosis Imaging in the Assessment of Tumor Regression Grade and T Stages After Neoadjuvant Chemoradiotherapy in Patients with Locally Advanced Rectal Cancer

Sichuan University, China Lanqing Yang

MRI: Deep Learning

15:40–16:30

**Chairman: Hiroto Kan
Tatsuya Hayashi**

- ★ ① IS-080 Magnetic Resonance Imaging Transformation Using General Adversarial Networks

Shingu College, South Korea Yu-Jin Shin

- ★ ① IS-081 Multitask Classification Scheme for Glioma in Contrast Enhanced MR Images Using Multiple 3D Convolutional Neural Networks

Fujita Health University Hiroto Yamashiro

- ★ ① IS-082 Automatic Detection of Extracellular pH Change in Brain Tissue Using Deep Learning Based Semantic Segmentation

Tokushima University Yuki Matsumoto

- ★ ① IS-083 High Resolution Reconstruction of Low-Frequency MR Images Using Convolutional Neural Network

Kyushu University Yuya Hirakawa

- ★ ① IS-084 Prediction of Treatment Outcome of Robotic-assisted Laparoscopic Radical Prostatectomy on MR Imaging : Prediction Using Convolutional Neural Networks and Machine Learning Methods

Fujita Health University Fumiaki Oba

Radiation Measurement: X-ray

16:40–17:10

**Chairman: Nao Ichikawa
Anna Isaka**

- ★ ① IS-085 Precise Energy Calibration Procedure for X-ray Imaging Detector Using Polychromatic X-ray Spectrum

Kanazawa University Cheonghae Lee

- ★ ① IS-086 A Study on Dose and Image Difference According to Tube Orientation in Skull Town's Inspection

Hanseu University, Korea JaeHyeon Yu

- ★ ① IS-087 Effect of Changes in Automatic Exposure Control Device on Patient Dose During Abdominal Posteroanterior Projection

Samsung Medical Center of Seoul, Korea Young-Cheol Joo

Radiation Measurement: IVR

17:20–17:50

**Chairman: Yukiko Abe
Tetsuo Kasahara**

- ★ ① IS-088 Evaluation of Radiation Entrance Surface Dose Rates for IVR Equipment

Shingu college, Korea Sung-Jin Kim

- ★ ① IS-089 Local Diagnostic Reference Levels of Interventional Radiology Procedures at King Chulalongkorn Memorial Hospital, Bangkok, Thailand

Chulalongkorn University, Thailand Kornkamol Prajamchuea

- ★ ① IS-090 Inaccuracy of the Kerma Area Product with the Equalization Filters

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Radiation Protection-2 **8:00–8:30** **Chairman: Kosuke Matsubara**
Yasutaka Takei

- ★ Ⓣ IS-091 Simulation Study to Calculate Shielding Rate for the Development of Three-Dimensional Non-Uniform Shielding Material
Kanazawa University Tatsuya Maeda
- ★ Ⓣ IS-092 Determination of Pediatric Specific Organ Dose in Abdominal CT Using Monte Carlo Simulation Based On Dose Tracking Software
Chulalongkorn University, Thailand Yuparak Innan
- ★ Ⓣ IS-093 Evaluation of Radiation Safety During Non-Destructive Testing of Diesel Particulate Filter Using Computed Radiography in Diesel Vehicles: Based on Monte Carlo Simulation
Korea University, Korea Donghan Jeong

Image Analysis: X-ray **8:40–9:30** **Chairman: Hideki Kato**
Megumi Yamamoto

- ★ Ⓣ IS-094 Automatic Partial Image Phase Only Correlation Analysis Can Detect Radiographic Finger Joint Space Narrowing in Rheumatoid Arthritis
Hokkaido University Taichi Okino
- ★ Ⓣ IS-095 Automatic Quantification of Joint Space Narrowing in Rheumatoid Arthritis Patients Using Original Software: Investigation of Failure Cases
Hokkaido University Chiaki Narisawa
- ★ Ⓣ IS-096 Reliability of Phase Only Correlation Analysis in Detection of Radiographic Finger Joint Space Narrowing in Rheumatoid Arthritis
Hokkaido University Aimi Taguchi
- ★ Ⓣ IS-097 Development of Semi-automatic Hip Joint Space Area Measurement
Graduate School of Health Science, Hokkaido University Nanase Hongo
- ★ Ⓣ IS-098 Image Quality Evaluation According to Mask Type During X-ray Head Imaging Due to COVID-19 Situation
Hanseu University, Korea Hyeon soo Song

Image Analysis: Deep Learning **9:40–10:10** **Chairman: Ikuo Kawashita**
Yoshikazu Uchiyama

- ★ Ⓣ IS-099 Deep Learning Based Tooth Disease Classification Using Dental Panoramic Radiography
Dongseo University, Korea Su-Yeon Choi
- ★ Ⓣ IS-100 An Efficiency of Lung Segmentation in Deep-Learning Based COVID-19 Classification Using Chest X-Ray Images
Dongseo University, Korea Ye-Dam Moon
- ★ Ⓣ IS-101 Development of Automated Classification Pipeline for Acute Myocardial Infarction in Echocardiography Using Spatiotemporal Domain Analysis Deep Neural Network
Fujita Health University Ryosuke Muraki

Particle therapy: Miscellaneous**10:20–11:10****Chairman: Taku Inaniwa**

- ★ ① IS-102 Brief Measurement of High Energy Neutrons Generated from a Carbon Ion Beam
Gunma University Heavy Ion Medical Center Makoto Sakai
- ★ ① IS-103 Fully Integrated Monte Carlo Simulation for Evaluating Radiation Induced DNA
Damage and Subsequent Repair Using Geant4-DNA
NIRS, QST Dousatsu Sakata
- ★ ① IS-104 Deep Learning-based Dose Image Prediction from Prompt X-ray Image for Proton
Therapy
Nagoya University Takuya Yabe
- ★ ① IS-105 Development of an Integrated Imaging System for Simultaneous Imaging of Prompt X-
rays and Luminescence at the Same Position
Nagoya University Maki Kitano
- ★ ① IS-106 Bragg Peak Verification in Proton Beam Therapy with PEM
Tohoku University M. Rafiqul Islam

Particle therapy: BNCT**11:20–12:00****Chairman: Satoshi Nakamura**

- ★ ① IS-107 Experimental Verification of Dose Calculation Algorithm for BNCT by a Combination
of Monte Carlo and Superposition Methods
Kyoto University Mai Nojiri
- ★ ① IS-108 Neutron Dose Evaluation with Real-time Detectors at Whole Body Position in BNCT
Kyoto University Nishiki Matsubayashi
- ★ ① IS-109 Study of Optimal Irradiation Method for Superficial Tumors Using a Hydrogel Bolus in
Cyclotron-based BNCT
Kyoto University Akinori Sasaki
- ★ ① IS-110 Development of a Dose Distribution Shifter to Fit Inside the Collimator of a BNCT
Irradiation System to Treat Superficial Tumours
Kansai BNCT Medical Center, Osaka Medical College Naonori Hu