

【JSRT-JSMP Joint International Conference on Radiological Physics and Technology (ICRPT) Oral】

April 10 (Thu.) 502

Radiation Measurement: Radiotherapy

10:30–11:10

Chairperson: Hayato Tsuno
Satoru Utsunomiya

- ★ TPI-001. Development of remote-operating neutron spectrometer for QA in BNCT irradiation field
Kyoto University Jakkrit Prateepkaew
- ★ TPI-002. Microscintillator for dosimetry of proton microbeam
Nagoya University Katsunori Yogo
- ★ TPI-003. Evaluation of maximum measurable dose rate of a plastic scintillator detector for FLASH carbon ion beam dosimetry
Hiroshima High-Precision Radiotherapy Cancer Center Shuichi Ozawa
- ★ TPI-004. Development and demonstration of a radiation-resistant dual-layer hybrid dose distribution detector utilizing Cherenkov and scintillator light
The University of Tokyo Hospital Takeshi Ohta

Radiation Measurement: Imaging

11:20–12:10

Chairperson: Yohei Inaba
Takamitsu Masuda

- ★ TPI-005. A novel algorithm for generating virtual high-contrast images based on X-ray attenuation analysis using an energy-resolving photon-counting detector
Kanazawa University Rina Nishigami
- ★ TPI-006. Organ dose measurement for filament material-based head and neck coronal 3D-printed phantom with dosimetry and Monte Carlo code
Kyushu University Donghee Han
- ★ TPI-007. Novel procedure to derive relationship between surface and internal doses taking into consideration X-ray incident direction during helical CT examinations
Yamaguchi University Hospital Kazuki Takegami
- ★ TPI-008. Visualization of scattered radiation sources during X-ray CT examinations using a high-sensitivity CMOS camera
Kyushu University Toshioh Fujibuchi
- ★ TPI-009. Generating parallel optical path in in-air readout optical computed tomography
Teikyo University Akito S Koganezawa

Image Informatics: Prediction

13:30–14:20

Chairperson: Daisuke Yoshimaru
Hidemi Kamezawa

- ★ TPI-010. Machine learning approaches for kidney diagnostics using SPECT imaging
University of Rajshahi, Bangladesh Alamgir Hossain
- ★ TPI-011. Novel mathematical models for tumor growth trajectories in breast cancer patients during neoadjuvant chemotherapy
Kyushu University Kenta Takida

- ★ TPI-012. Estimation of age using alveolar bone loss with integrating deep learning for identity recognition and biological aging analysis
Chonnam National University, Korea Shaohua Tang
- ★ TPI-013. ResNet-based exposure index (EI) prediction model using chest radiographs: A single institution study
Dongseo University, Korea Hojin Kim
- ★ TPI-014. Deep learning based automatic body weight estimation from postmortem computed tomography scout views
Busan Institute, National Forensic Service, Korea Jin-Haeng Heo

Image Informatics: Segmentation

14:30–15:40

Chairperson: Keisuke Usui
Noriyuki Kadoya

- ★ TPI-015. TAILOR-TS system: tailored tumor segmentation system with facility-specific semi-supervised learning
Hiroshima University Daisuke Kawahara
- ★ TPI-016. Automatic segmentation of large gross tumor volumes based on hierarchical vision transformer model for radiotherapy patients with stage III NSCLC
Kyushu University Qijing Lin
- ★ TPI-017. Efficient deep learning segmentation model with small training dataset for three-dimensional automatic measurement of gross tumor volume diameters of lung cancer on planning CT images
Kyushu University Yunhao Cui
- ★ TPI-018. Development of deep learning-based dental implant segmentation model and analysis of panoramic image preprocessing effects
Chonnam National University, Korea Seungmin Kim
- ★ TPI-019. Development of a PCA-based post-processing algorithm for individual teeth segmentation in dental X-ray images
Chonnam National University, Korea Jihyeong Ko
- ★ TPI-020. Automatic alveolar bone loss segmentation model on panoramic dental radiograph images
Chonnam National University, Korea Sasi Sooksatra
- ★ TPI-021. Deep learning model for multi-class alveolar bone loss semantic segmentation on panoramic dental radiograph images
Chonnam National University, Korea Sasi Sooksatra

Radiation Protection: CT

15:50–16:20

Chairperson: Yuta Matsunaga
Kosuke Matsubara

- ★ TPI-022. Evaluation of recognition and utilization level for national diagnostic reference levels
Daegu Health College, Korea Jae Hoo Joo
- ★ TPI-023. Evaluation of effective dose on dental cone-beam CT using PC based Monte Carlo simulation
Daegu Health College, Korea Oh Hyog Kwon
- ★ TPI-024. Monte Carlo simulation-based calculation of conversion factor for effective dose using Korean national computed tomography dose index registry
Dongseo University, Korea Lia W. Izzati

April 10 (Thu.) 419

X-ray and Others

10:30–11:30

Chairperson: Kuniyuki Hidaka
Hiraku Kawamura

- ★ TPI-025. Study on anode heel effect in digital radiography system
Hanseo University, Korea Min Woo Lee
- ★ TPI-026. The effect of grid focus distance on chest posterior radiography using an automatic exposure control system
Samsung Medical Center, Korea Young Cheol Joo
- ★ TPI-027. Hindfoot alignment view versus long axial radiographic view
Taipei Medical University-Shuang Ho Hospital, Taiwan KeMing Hu
- ★ TPI-028. Cross calibration analysis of dual-energy X-ray absorptiometry on the same model bone densitometry system
Daegu Health College, Korea Dong hyun Kim
- ★ TPI-029. Comparison of international standards for quality control in digital breast imaging systems: a focus on Korea, Japan, and the United States
Shingu College, Korea Joonsu Hwang
- ★ TPI-030. Fundamental study on optimal contrast media concentration in CBCT after WEB implantation for cerebral aneurysm
Osaka Metropolitan University Hospital Yusuke Torada

April 11 (Fri.) 502

Radiation Protection: Occupational Exposure

8:00–8:40

Chairperson: Yusuke Koba
Jun'ichi Kotoku

- ★ TPI-031. Distribution measurement of spatial dose by position of medical staff in intervention procedure
Hanseo University, Korea Junyoung Park
- ★ TPI-032. Development of radiation protection educational material by augmented reality during angiography with user's opinion
Kyushu University Koki Noguchi
- ★ TPI-033. Real-time imaging of scattered radiation sources during X-ray fluoroscopy using a portable radiation visualization camera
Kyushu University Mayu Sakai
- ★ TPI-034. Investigate the contribution of scattered radiation from each source at the operator's position using Monte Carlo simulation
Kyushu University Mao Tabuchi

Radiomics

8:50–10:00

Chairperson: Takehiro Shiinoki
Takahiro Nakamoto

- ★ TPI-035. Improvement of normalization of MRI to estimate pathological grade of prostate cancer by local radiomics
Tohoku University Shinichi Tanaka
- ★ TPI-036. Automated approach for the stratification of stroke patients based on radiomic features
University of Rajshahi, Bangladesh Alamgir Hossain

- ★ TPI-037. Noninvasive detection of EGFR gene mutations using electron density images from dual-energy CT
University of Miyazaki Hospital Ryohei Fujisaki
- ★ TPI-038. N-dimensional persistent homology for identification models of epidermal growth factor receptor mutation characterized on CT images of patients with non-small cell lung cancer
Kyushu University Takumi Kodama
- ★ TPI-039. Evaluation of robustness of MR-based prediction models of epidermal growth factor receptor mutations in metastatic brain tumors using coefficient of variation
Kyushu University Yuki Yamaguchi
- ★ TPI-040. Evaluation of conventional and PCA-based feature selection method of multi-omics prediction model for radiation pneumonitis in NSCLC Stage III patient
Tohoku University Wynn Wingyi Lee
- ★ TPI-041. Interpretation of survival predictors by CT-based radiogenomics for serous ovarian cancer
Hiroshima University Misato Kishi

Nuclear Medicine: Performance Evaluation

10:10–11:00

Chairperson: Toshimune Ito

Chie Toramatsu

- ★ TPI-042. Facilitating CT dose reduction for patients undergoing serial SPECT/CT imaging during ^{177}Lu DOTATATE therapy
Kaohsiung Medical University, Taiwan Ching-Ching Yang
- ★ TPI-043. Evaluation of PET image change according to CT attenuation map of various pitch conditions
Hanseu University, Korea Junhyeok Heo
- ★ TPI-044. Impact of ^{89}Zr decay properties on image quality and quantitative accuracy in PET
QST Go Akamatsu
- ★ TPI-045. Comparative evaluation of image indicators by PET/CT equipment
Shingu College, Korea Choi JiYu
- ★ TPI-046. Performance evaluation of Mirai-PET: a high-resolution and large FOV small animal PET with TOF-DOI detection
QST Taiyo Ishikawa

Particle Therapy

15:30–16:20

Chairperson: Taku Inaniwa

Sinnosuke Matsumoto

- ★ TPI-047. Measurement method using acrylic phantom for quality assurance of BNCT procedure
Kyoto University Nishiki Matsubayashi
- ★ TPI-048. Feasibility study of spot scanning by MeV electron beam convergence control using electromagnets
Tokyo Metropolitan University Yuma Hayashi
- ★ TPI-049. Conceptual design of a static gantry system
Osaka University Hang Zhao
- ★ TPI-050. Focal dose-averaged linear energy transfer boost for prostate carbon-ion radiotherapy: a planning study
QST Bo Zhao
- ★ TPI-051. Dosimetry benefits of adaptive radiotherapy in carbon ion radiotherapy for locally advanced non-small cell lung cancer: a comparative analysis of tumor coverage and normal tissue protection
Gunma University Zhuojun Ju

Particle Therapy: Biophysics

16:30–17:10

Chairperson: Chang Weishan
Akihiko Matsumura

- ★ TPI-052. The appropriateness of the linear-quadratic model in predicting hypofractionated radiotherapy dose response for photon and proton irradiation
Shandong First Medical University, China Qi Liu
- ★ TPI-053. Relative biological effectiveness (RBE) study at different depths of proton spread-out Bragg peak
Cancer Hospital of Shandong First Medical University, China Xiaoxin Zuo
- ★ TPI-054. Exploration of the role and mechanism of proton beams in radiotherapy-resistant cells
Shandong First Medical University, China Anhang Zhang
- ★ TPI-055. Normal tissue complication probability model for acute oral mucositis in patients with head and neck cancer undergoing carbon ion radiation therapy: based on dosimetry, radiomics, and dosiomics
Gunma University Xiangdi Meng

Novel Technology

17:20–18:00

Chairperson: Kousaku Saotome
Satoru Sugimoto

- ★ TPI-056. Blockchain enhanced particle radiotherapy: a cross-platform secure data sharing platform for particle radiotherapy scenario
Cancer Hospital of Shandong First Medical University, China Yupeng Zou Jian Zhu
- ★ TPI-057. Patient setup guide using AR technology for radiation therapy
Kyushu University Jinyue Wu
- ★ TPI-058. Micro-CT assessment of Nostoc commune extract's biological effects on osteoporosis models
Tzu Chi University, Taiwan Nien C. Zhang
- ★ TPI-059. Impact of long-term step trajectories on weight loss
Teikyo University Kenshiro Taguchi

April 11 (Fri.) 419

Clinical Technique

8:00–8:50

Chairperson: Kei Fukuzawa
Taiki Magome

- ★ TPI-060. Discussion on the value of image fusion based on artificial intelligence
West China Hospital, China Hanyu Li
- ★ TPI-061. A review on alternatives for sedation in children's MRI: systematic approach
The First Affiliated Hospital, China Fangting Chen
- ★ TPI-062. Characteristics of patients with allergy-like reactions to iodinated contrast media undergoing computed tomography at a super-tertiary care hospital
Srinagarind Hospital, Thailand Sirintra Nahokham
- ★ TPI-063. Innovative use of shared decision-making and patient decision aids to enhance treatment selection for chronic low back pain
Ministry of Health and Welfare Shuang-Ho Hospital, Taiwan Yi Chun Huang
- ★ TPI-064. Evaluation of adverse reactions and trends in contrast agent use in CT imaging: a single-center data development study
Dong-A University Hospital, Korea Mingyu Kim

April 12 (Sat.) 502

MR: Analysis and Technique

8:00–9:10

Chairperson: Yasuo Takatsu
Susumu Takano

- ★ TPI-065. Fast brain perfusion quantification using second-order motion-compensated diffusion imaging with phase-contrast
Kanazawa University Naoki Ohno
- ★ TPI-066. Magnetic resonance imaging on metal artifacts a comparative study of 2D, 3D images
Hanseu University, Korea Jungyeon Park
- ★ TPI-067. Assessment of vascular endothelial injury in rat models of unilateral carotid artery injury using 4D-flow MRI
Osaka University Sei Yasuda
- ★ TPI-068. Short-term changes in volumes, T₂, and diffusion parameters of tumor and peritumoral edema after embolization in supratentorial meningioma
Kanazawa University Ling Li
- ★ TPI-069. Development of diagnostic support software for intracerebral hemorrhage detection and elapsed time estimation using multi-sequence magnetic resonance images
Hiroshima North Medical Center Asa Citizens Hospital Masayoshi Mori
- ★ TPI-070. Compare MRI cardiac scanning in China and Japan
Wenzhou Medical University, China Fangting Chen
- ★ TPI-071. Preventing abnormal safety events in MRI examinations using the HFMEA method
Shuang-Ho Hospital, Taiwan H.H. Tsai

Radiation Protection: X-ray

9:20–10:20

Chairperson: Takashi Ohba
Toshioh Fujibuchi

- ★ TPI-072. Evaluating organ-specific radiation doses in neonatal incubator X-ray procedures using Monte Carlo simulation
Hanseu University, Korea Eunhye Kim
- ★ TPI-073. A study of the minimization of exposure conditions during AP and lateral imaging of the lumbar spine in a digital radiography system
Hanseu University, Korea Hyeon Jun Seo
- ★ TPI-074. Effectiveness of radiation dose optimization on patient radiation dose obtained from traumatic carotid-cavernous fistula endovascular treatment.
Khon Kaen University, Thailand Woranan Kirsattayakul
- ★ TPI-075. Assessment of radiation dose and factors influencing it in mammography: a single-center study
Khon Kaen University, Thailand Songnisa Rammasoot
- ★ TPI-076. Evaluating the suitability of exposure index as a patient dose monitoring tool in portable abdominal radiography
Dongseo University, Korea Seongwon Jeon
- ★ TPI-077. Comparison of doses for custom-made phantoms and acrylic phantoms with varying thicknesses in breast stereotactic biopsy
Samsung Medical Center, Korea Min Ji Hong

Photon Therapy: Irradiation Technology

13:10–14:00

Chairperson: Satoko Saotome
Shuichi Ozawa

- ★ TPI-078. A study on the dose distribution of photoneutrons according to the patient's treatment direction in radiation therapy
Hanseon University, Korea Yejun Oh
- ★ TPI-079. Comparative evaluation of organ dose and image quality in kilovoltage CBCT imaging systems on an O-ring linear accelerator
Chulalongkorn University, Thailand Kantida Jittrakool
- ★ TPI-080. Target position estimation based on diaphragm motion using respiratory-phase-adjusted variable offset vectors for markerless tumor tracking radiotherapy
Kyoto University Yukine Shimizu
- ★ TPI-081. Respiratory reproducibility evaluation of a surface motion phantom for SGRT
Tokyo Metropolitan University Takuma Ito
- ★ TPI-082. Evaluation of optimal rigid body registration algorithms for portable body surface monitoring devices
Fujita Health University Yudai Matsugi

Photon Therapy: Biophysics

14:10–14:40

Chairperson: Akihiro Takemura
Hiroaki Akasaka

- ★ TPI-083. Radiotherapy resistance of Hsa_circ_0000337 and its encoded proteins in esophageal squamous carcinoma cells
Shandong First Medical University, China Anhang Zhang
- ★ TPI-084. The radiotherapeutic technology proposal aimed at its optimization for hepatocellular carcinoma using biomarkers
Hirosaki University Haruto Tanaka
- ★ TPI-085. Tumor-specific circRNA-derived antigen peptide identification for esophageal squamous cell carcinoma
Qilu Hospital, China Liyuan Fan

Brachytherapy and Others

14:50–15:20

Chairperson: Hidenobu Tachibana
Hiroyuki Okamoto

- ★ TPI-086. Calibration of high-dose rate brachytherapy source (iridium-192) using well-type ionization chamber and high-dose-rate remote afterloading brachytherapy machine
Bangabandhu Sheikh Mujib Medical University, Bangladesh Harun O. Roshid
- ★ TPI-087. Verification and calculation of shielding for 50 kVp high-dose rate (HDR) electronic brachytherapy commissioned at Gonoshasthaya cancer hospital and research centre
Gonoshasthaya Cancer Hospital & Research Centre, Bangladesh Nikas K. Nath
- ★ TPI-088. Development of an AI chatbot for radiotherapy using retrieval-augmented generation
Tohoku University Yoshiyuki Takahashi

Image Informatics: Generative AI

15:30–16:30

Chairperson: Chisako Muramatsu
Akihiro Haga

- ★ TPI-089. Conditional diffusion model-based image transformation of MR sequences in MR-guided radiotherapy
Kyoto University Linna Zhang
- ★ TPI-090. In-house automatic evaluation of artificial intelligence image reconstruction algorithms in CT
Tuen Mun Hospital, Hong Kong Kwan Wai Li
- ★ TPI-091. Development of deep learning-based diaphragm suppression technique through in-silico approach
Kanazawa University Rie Tanaka
- ★ TPI-092. Image quality enhancement of small FOV cone-beam CT by using a generative model
Hirosaki University Idzuru Yoshinaga
- ★ TPI-093. Generation of lung nodule images from image findings using latent diffusion model
Meijo University Kaito Urata
- ★ TPI-094. Multi-task scheme for image findings generation and classification in chest CT: a comparative study of image captioning models
Meijo University Maiko Nagao

Image Informatics: Detection

16:40–17:20

Chairperson: Rie Tanaka
Hidetaka Arimura

- ★ TPI-095. Initial investigation of triple negative detection in breast MR images using a multi-slice multi-phase vision transformer
Meijo University Ayaka Kawai
- ★ TPI-096. Preliminary study on an automated detection scheme for pediatric forearm fractures in X-ray images using Open CLIP
Meijo University Haruna Suzuki
- ★ TPI-097. Evaluation of deep learning-based segmentation models for cerebral hemorrhage detection in postmortem computed tomography
Dongseo University, Korea Yeji Kim
- ★ TPI-098. Classification of postmortem computed tomography images for cerebral hemorrhage detection using deep learning
Dongseo University, Korea Ingyeong Mun

April 13 (Sun.) 502

CT: Analysis and Others

8:00–9:00

Chairperson: Takanori Masuda
Shingo Ohira

- ★ TPI-099. Radiation dose reduction accelerated with deep learning reconstruction for temporal bone regions in ultra-high-resolution CT imaging
Kyushu University Hospital Yuki Sakai
- ★ TPI-100. CT channel by using 3D modeling phantom evaluation of the usefulness of the wide detector
Hanseu University, Korea Seung Gu Kim
- ★ TPI-101. Comparison of commercially available statistical iterative CT reconstruction algorithms from different vendors for performance evaluation of low-contrast detectability in pediatric brain protocols: a phantom study
Tuen Mun Hospital, Hong Kong Kwan Wai Li

- ★ TPI-102. Application of virtual monochromatic images in quantitative computed tomography to reduce the measurement error of bone mineral density: a phantom study
West China Hospital, China Jing Tang
- ★ TPI-103. Prediction of CT tube service life based on tube filament
West China Hospital, China Hanyu Li
- ★ TPI-104. Exploring radiographers' divergent approaches to infection prevention and control in CT: a think-aloud study
University of Sydney, Australia Yobelli Jimenez

CT: Technique and Clinical Application

9:10–10:00

Chairperson: Shohei Kudomi
Akihiro Haga

- ★ TPI-105. Feasibility of protocol optimization for CT coronary angiography using a commercial pulsating cardiac phantom
Tuen Mun Hospital, Hong Kong Kwan Wai Li
- ★ TPI-106. Effective atomic number score in calcified plaque evaluation: approach using photon-counting CT
Okayama University Takashi Asahara
- ★ TPI-107. The correlation between the Hounsfield unit and bone mineral density to predict osteoporosis in patients
Thammasat University, Thailand Dutsadee Suttho
- ★ TPI-108. Differentiation of tumor budding grade of colon cancer using noise-optimized virtual monoenergetic image in dual-energy computed tomography
Sichuan Cancer Hospital & Institute, China Peng Zhou
- ★ TPI-109. Differentiation of malignant grade of non-mucinous pulmonary adenocarcinomas in subsolid nodules using enhanced dual-energy computed tomography
The Sixth People's Hospital of Chengdu, China Xiaohua Zheng

Radiation Protection: Radiotherapy and Nuclear Medicine

10:10–10:40

Chairperson: Kei Wagatsuma
Sinnosuke Matsumoto

- ★ TPI-110. The absorption dose and secondary tumor risk induced by different imaging methods in image-guided radiotherapy
Linyi Traditional Chinese Medicine Hospital, China Qinghao Cui
- ★ TPI-111. Study of calculating shielding wall thickness in Cyclotron room
Shingu College, Korea Huijeong An
- ★ TPI-112. Comparative dosimetry study of PARaDIM with ICRP Publication 128: calculation of organ and effective doses from 18F-FDG radiopharmaceutical
Kyushu University Shupti Sarker

Nuclear Medicine: Simulation and Others

10:50–11:50

Chairperson: Koichi Okuda
Kenta Miwa

- ★ TPI-113. Cherenkov light imaging for lutetium oxodotreotide
Nagoya University Ge Yutong
- ★ TPI-114. Synergistic reconstruction method for PET and Compton imaging of whole gamma imaging
QST Hideaki Tashima

- ★ TPI-115. A one-ring prototype of hemispherical brain PET with novel TOF-DOI detectors
QST Kurumi Narita
- ★ TPI-116. Impact of threshold value for maximum standardized uptake value on pretreatment FDG-PET-based prediction models for recurrence in patients with lung cancer prior to SBRT
Kyushu University Taishi Shiroma
- ★ TPI-117. Considering stable and unstable breathing PET counts during the steady state method
The Iwate Medical University Toshiaki Sasaki
- ★ TPI-118. Utility of total-body PET in monitoring carbon ion therapy: demonstration in rat
QST Chie Toramatsu

Photon Therapy: Dose Evaluation

13:10–13:50

Chairperson: Kaoru Ono
Ryo Morimoto

- ★ TPI-119. Determination of phantom materials for a CT/MRI-corresponding anthropomorphic multimodal male pelvic phantom for end-to-end test in MR-guided online ART
Tokyo Metropolitan University Masato Nishitani
- ★ TPI-120. Evaluation of biological equivalent dose-based treatment planning in head and neck region
Fujita Health University Natsuki Adachi
- ★ TPI-121. Robustness evaluation of using aperture shape controller in postmastectomy radiotherapy (PMRT) using VMAT
Komazawa University Fumiki Ito
- ★ TPI-122. Evaluation of the 3D convolutional neural network approach for automated VMAT plan creation in head and neck cancer patients
Nagasaki University Hospital Takuya Nakamura

Proton Therapy

14:00–15:00

Chairperson: Taeko Matsuura
Toshiyuki Toshito

- ★ TPI-123. Stopping-power ratio evaluation for proton therapy planning based on dual-energy CT
Shandong First Medical University, China Jinghao Duan
- ★ TPI-124. Safety check and dose evaluation of a commercial dual-energy CT stopping-power ratio software for proton planning in the treatment planning system
Shandong First Medical University, China Jinghao Duan
- ★ TPI-125. Assessment of point dose and proton range in Monte Carlo vs. pencil beam algorithms for proton therapy treatment planning system
Chulalongkorn University, Thailand Wiroon Monkongsubsin
- ★ TPI-126. The effect of minimum monitor units (MMU) on the quality and delivery efficiency of proton therapy
Shandong Tumor Hospital, China Yunyi Fan
- ★ TPI-127. Optimization of light-ion quantum molecular dynamics model for nuclear fragmentation in proton therapy
Tokushima University Kai Hashimoto
- ★ TPI-128. Accuracy of patient-specific deep learning for markerless tumor tracking; some comprehensive tests using lung phantoms and radiochromic films
University of Tsukuba Toshiyuki Terunuma