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

April 16 (Thu.)　502

Radiation Measurement: Imaging

14:00–15:00　Chairperson: Haruki Wada
Takeshi Ohno

E TPI-001. Quantitative X-ray imaging related to effective atomic number with correction of energy distortion for clinical use of photon counting detectors
Junshin Gakuen University　Natsumi Kimoto

E TPI-002. Evaluation of the utility of the ALARA-M program for radiation dose calculation in mammography
Shingu University, Korea　HyeongGyu Kim

E TPI-003. Evaluation of ocular dose in diagnostic cervical spine radiography: a quantitative approach
Shingu University Korea　Kyeong Min Kim

E TPI-004. Active-type OSL dosimeter for real-time dose measurement with counting-loss correction in the diagnostic X-ray region
Kobe Tokiwa University　Sota Goto

E TPI-005. Feasibility of an IEC-based exposure index framework with X-ray sensor-integrated flat panel detector
The Graduate School of Dongseo University, Busan, Korea　Lia W. Izzati

E TPI-006. Dosimetric characterization of a benchtop kilovoltage X-ray irradiator for low-dose in vitro cell irradiation
University of the Philippines - Philippine General Hospital, Philippines　Ma. Elizabeth M. Vidallon

Radiation Measurement: CT and Environmental Monitoring

15:10–16:10　Chairperson: Takashi Ohba
Toshioh Fujibuchi

E TPI-007. Study of lens dose in CT with and without a patient table using adult male and female mesh-type reference computational phantoms
Shingu University, Korea　Huijeong An

E TPI-008. Visualization of internal dose distribution by precise experimental approach with consideration of X-ray incident direction during helical CT examination
Yamaguchi University Hospital　Kazuki Takegami

E TPI-009. Estimation of organ doses in abdominal-pelvic CT: comparison of Monte Carlo-based simulation tools with physical measurements
Kanazawa University　Chatnapa Nuntue

E TPI-010. Development of a real-time radon monitoring and sharing application through public participation
Hanseo University, Korea　DoHyun Kim

E TPI-011. Development of a device for monitoring and measuring radiation leakage inside and outside a nuclear medicine department
Hanseo University, Korea　Minsu Yang

E TPI-012. Patient and staff radiation exposure during embolization and thrombectomy procedures in a neurointerventional radiology unit
Khon Kaen University, Thailand　Sararat Thaitonglang

Particle Therapy: Biophysics

16:20–16:50 Chairperson: Katsunori Yogo
Kenta Takada

E TPI-013. Early effects of ultra-high dose rate (FLASH) carbon-ion irradiation on whole-brain tissue injury
Institute of Modern Physics, Chinese Academy of Sciences, China Yuan Zhou

E TPI-014. Development and validation of an algorithm for predicting the antitumor effects of heavy ion beam therapy
Kyushu University Fuma Tsuji

E TPI-015. Prediction of tumor hypoxia status from the kinetics of irradiation induced positron emitters: carbon-ion irradiation to tumor rat models
QST Chie Toramatsu

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Radiation Protection: X-ray

14:00–15:00 Chairperson: Kosuke Matsubara
Yohei Inaba

E TPI-016. Evaluation of the usefulness of attachable folding lead curtains for radiation safety in the NICU environments
Hanseo University, Korea Donggeon Lim

E TPI-017. Optimizing radiation protection in clinical practice with thickness requirements for lead-free barium sulfate boards in diagnostic radiology
Hanseo University, Korea Eunhye Kim

E TPI-018. Evaluation of bismuth shielding for dose reduction in radiation-sensitive regions and ambient dose in pediatric radiography
Hanseo University, Korea Jinseo Kim

E TPI-019. Variability of exposure index (EI) under repeated radiographic examinations of the same patient in clinical situation
The Graduate School of Dongseo University, Korea Hojin Kim

E TPI-020. Cumulative effective dose over 100 mSv in a single day from computed tomography scans at King Chulalongkorn Memorial Hospital
Chulalongkorn University, Thailand Shiwani Shayal

E TPI-021. Local diagnostic reference level based on clinical indications for adults computed tomography at King Chulalongkorn Memorial Hospital
Chulalongkorn University, Thailand Ikunanoa Tohotoa

Radiation Protection: Radiotherapy and Nuclear Medicine

15:10–15:40 Chairperson: Noriaki Miyaji
Shinnosuke Matsumoto

E TPI-022. MIDoC-Fil: A model-based internal dose calculator for Filipinos
University of the Philippines Manila, Philippines Michael Angelo V Gloria

E TPI-023. Comparative dosimetry study of PARaDIM and RTphits with ICRP publication 128: Calculation of organ doses from 18F-FDG radiopharmaceutical
Kyushu University Shupti Sarker

E TPI-024. Assessment of S-values for internal dosimetry in thyroid scans using various radionuclides based on modified ICRP 145 phantoms
Eulji University, Korea Min-Gwan Lee

Nuclear Medicine

15:50–16:40 Chairperson: Toshimune Ito
Takayuki Shibutani

E TPI-025. Development of an ultrahigh-resolution PET with 3-layer DOI detectors for mouse brain imaging
QST Han Gyu Kang

E TPI-026. Development of a 7-ring brain PET prototype using TOF-DOI detectors
QST Kurumi Narita

E TPI-027. Dual-isotope whole gamma imaging: ^{89}Zr-anti-CD38-antibody and ^{18}F-NaF imaging of multiple myeloma mouse
QST Go Akamatsu

E TPI-028. Investigation of weight, inverse square of height, and body mass index as predictors of positron emission tomography image signal-to-noise ratio in whole-body fluorodeoxyglucose positron emission tomography/computed tomography
University of the Philippines Manila, Philippines Lance Eros Lewis E. Dadios

E TPI-029. Development of a web-based simulation program for analyzing the distribution of radiopharmaceuticals within the body
Shingu University, Korea Gangin Song

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MR: Technique and Clinical Application

8:00–8:40 Chairperson: Yuki Kanazawa
Susumu Takano

E TPI-030. Evaluation of an MRI-compatible perfusion phantom simulating cortical venous reflux in dural arteriovenous fistula
Tatebayashi Kosei General Hospital Tomoya Suzuki

E TPI-031. Inter-modality comparison of rat carotid blood flow using 4D-flow MRI and doppler ultrasound
The University of Osaka Sei Yasuda

E TPI-032. Assessment of cerebral oxygen extraction and cerebral metabolic rate of oxygen: Are oxygen extraction estimates based on dynamic susceptibility contrast MRI data reasonable from an age dependence perspective?
Lund University, Sweden Ronnie Wirestam

E TPI-033. Investigation into the usefulness of confirming the access route prior to mechanical thrombectomy by using aortic magnetic resonance angiography
Nakamura Memorial South Hospital Osamu Masuko

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MR: Analysis and Others

8:50–9:20 Chairperson: Naoki Ohno
Hirohito Kan

E TPI-035. Quantitative assessment of pulmonary function in COPD with phase-resolved functional lung MRI
West China Hospital of Sichuan University, China Yu Zhang

E TPI-036. Quantitative assessment of liver fibrosis: B1 inhomogeneity-corrected variable flip angle T1 mapping on gadobenate dimeglumine-enhanced MRI
The First Affiliated Hospital of Fujian Medical University, China Hui Ma

E TPI-037. Feasibility of accelerated 3D isotropic high resolution T2 weighted bladder magnetic resonance imaging using the deep learning-constrained compressed sensitivity encoding technique (SENSE)
West China Hospital of Sichuan University, China Hui Xu

Particle Therapy: Dose Evaluation and Verification

9:40–10:20 Chairperson: Taku Inaniwa
Maria Varnava

E TPI-038. Inter-fraction gamma-index analysis of in-beam OpenPET images for carbon-ion therapy
QST Hideaki Tashima

E TPI-039. Impact of metal artifact reduction on dose distribution calculation in carbon ion radiotherapy
Kyushu University Arata Kaneko

E TPI-040. Evaluation of the Monte Carlo - removal diffusion method for independent dose verification in BNCT treatment planning
Kansai BNCT Medical Center, Osaka Medical and Pharmaceutical University Mai Nojiri

E TPI-041. Improvement of a soft error detector using advanced FPGAs
Kyushu University Kota Miyazaki

Clinical Technique and Novel Technology

13:20–14:20 Chairperson: Toshiya Akatsu
Naoki Kodama

E TPI-042. Clinical audit in diagnostic radiology at King Chulalongkorn Memorial Hospital
Chulalongkorn University, Thailand Anchali Krisanachinda

E TPI-043. Predictive modeling of downtime and interlock events in linear accelerators to enhance operational efficiency
Square Cancer Centre, Square Hospitals Ltd, Bangladesh Md. Anwarul Islam

E TPI-044. The role of physiotherapy in managing post-mastectomy complications among breast cancer patients after radiotherapy: Findings from a pilot study
Handicap International (Humanity &Inclusion), Bangladesh Fatematuj Johora

E TPI-046. Deep image prior-based super-resolution and point spread function correction for quantitative improvement in neuro-oncological PET imaging
Juntendo University Ayano Kitani

E TPI-047. Factor and scenario analysis based on Bayesian network modeling of radiation-related clinical errors
Hiroshima University Hospital Shintaro Tsuda

E TPI-048. Targeted-beam magnetic therapy by combining cellular selectivity by magnetic nanoparticle delivery and tumor-killing by beam-focused magnetic energy
National Institute of Advanced Industrial Science and Technology Zhiwei Tay

Radiomics

14:40–15:40 Chairperson: Takehiro Shiinoki
Daisuke Kawahara

E TPI-049. A data-driven radiomics approach for modeling and visualizing disease evolution in glioma
University of Miyazaki Mio Ishii

E TPI-050. Temporal change of fractal properties at pre- and post-treatment CT images in patients with stage IV non-small cell lung cancer
Kyushu University Gai Tokushige

E TPI-052. Assessment of fractal dimension for prostate cancer grade groups in apparent diffusion coefficient maps using multiple-threshold box counting algorithm

Kyushu University Manato Motomatsu

E TPI-053. Prediction of prostate motion using radiomics features from simulation computed tomography images

Fujita Health University Ryo Hanai

E TPI-054. Temporal patterns in apparent diffusion coefficient map features for prognostic prediction of patients with breast cancer undergoing neoadjuvant chemotherapy

Kyushu University Kei Takagishi

E TPI-055. Adaptive fuzzy masks: boosting radiomic reliability in head and neck tumors amid delineation uncertainty

The Hong Kong Polytechnic University, China Jin Cao

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Image Informatics: Generative AI-1

9:00–10:00 Chairperson: Chisako Muramatsu
Jun'ichi Kotoku

E TPI-056. SwinUNETR-based synthesis of contrast-enhanced T1-weighted MRI from multiparametric MRI in post-treatment diffuse glioma

Niigata University Randika Herath

E TPI-057. CBCT-to-MR image transformation using a denoising diffusion probabilistic model for brain tumor radiotherapy

Kyoto University Ichiyo Kamada

E TPI-058. Single conditional diffusion model for cross-plane enhancement of 2D cine MR images toward T2-weighted quality in MR-guided adaptive radiotherapy

Kyoto University Linna Zhang

E TPI-059. 4D pulmonary evaluation using dynamic chest radiography and X2CT-GAN: an in-silico study

Kanazawa University Mayu Kitamoto

E TPI-060. Explainable diagnostic support for lung CT: Image-finding generation and classification using open-source GPT and Vision Transformer

Meijo University Maiko Nagao

E TPI-061. Development and validation of a CT-to-MR image translation model using Energy-Guided Stochastic Differential Equations

Tokyo-kita Medical Center Yasuhisa Kishi

Image Informatics: Detection

10:20–11:10 Chairperson: Kentaro Miki
Hidetaka Arimura

E TPI-063. Deep learning-based support system for alignment classification and correction guidance in postoperative total knee arthroplasty lateral radiographs

Hokkaido Social Work Association Obihiro Hospital Kazuhiro Ogasawara

E TPI-064. Automatic detection of pediatric forearm fractures from multi-view X-ray images using OpenCLIP

Meijo University Haruna Suzuki

E TPI-065. Automated geometric morphological quantification of wrist bones on radiographs for rheumatoid arthritis evaluation

Hokkaido University Jiajing Zhou

E TPI-066. Optimizing intracranial hemorrhage detection on postmortem computed tomography: Deep U-Net segmentation with a refined labeling approach to reduce postmortem artifacts
National Forensic Service, Korea InSeok Choi

E TPI-067. Deep learning-based detection of obstructive lung disease in dynamic chest radiography
Kanazawa University Nanami Imai

Radiation Measurement: Radiotherapy

13:00–13:40 Chairperson: Hayato Tsuno
Satoru Utsunomiya

E TPI-068. Monte Carlo-based multiple dose-voxel kernel framework for personalized voxel dosimetry in ^{177}Lu peptide receptor radionuclide therapy
Kanazawa University Khajonsak Tantiwetchayanon

E TPI-069. Development of a novel Compton camera technology for beam monitoring during proton therapy toward the clinical application
Kitasato University Takahiro Mizoguchi

E TPI-070. Fundamental characterization of a metal-free, water-equivalent reference-class ionization chamber for radiotherapy
Hiroshima High-Precision Radiotherapy Cancer Center Shuichi Ozawa

E TPI-071. A sign of tolerance photon dose in Cardiac Implantable Electronic Devices (CIEDs)
Fujita Health University Takehiro Yoshida

Photon Therapy: QA/QC

13:50–14:20 Chairperson: Chie Kurokawa
Naoki Hayashi

E TPI-072. Development of an electronic portal imaging device-based virtual audit framework in radiotherapy
Kyoto University Maiko Kishigami

E TPI-073. Determination of optimal camera position for a portable surface monitoring system on an O-ring gantry linear accelerator
Fujita Health University Honoka Nagasaka

E TPI-074. Sensitivity of EPID-based PSQA tool for error detection in single-isocenter SRS for multiple targets
Chulabhorn Hospital, Chulabhorn Royal Academy, Thailand Aphisara Deeharing

Photon Therapy: AI

14:30–15:30 Chairperson: Akihiro Takemura
Ryota Tozuka

E TPI-075. The feasibility of using DenseNet for improving low-field MRI acquired at 0.3-0.35 T
Kaohsiung Medical University, Taiwan Jui-Ni Chang

E TPI-076. A bias field correction workflow based on generative adversarial network for abdominal cancers treated with 0.35T MR-LINAC
Kaohsiung Medical University, Taiwan Ching-Ching Yang

E TPI-077. Comparing single- and multiple-input generative adversarial networks for improving cone beam CT in radiotherapy
Kaohsiung Municipal Siaogang Hospital, Taiwan Hung-Te Yang

E TPI-078. Evaluation of the reproducibility and accuracy of AI-based automatic contour detection in head and neck region

The Fujita Health University Shu Ito

E TPI-079. Development of deep learning-based multi-modality segmentation of primary gross tumor volume for head and neck cancer

Tohoku University Seiya Koga

E TPI-080. Deep learning-based automatic segmentation of organs at risk on MRI for cervical cancer brachytherapy

Chulalongkorn University, Thailand Yen Nhi Tran

Photon Therapy: Dose Evaluation and Technologies

15:40–16:40 Chairperson: Naoki Kinoshita
Hidenobu Tachibana

E TPI-081. Monte Carlo analysis of annihilation photon production in high-energy photon radiotherapy

Juntendo University Hideyoshi Iino

E TPI-082. Comparison of low-MU dose profiles between standing wave and traveling wave linear accelerators using a CMOS image sensor

Tokyo Metropolitan University Shiori Naraoka

E TPI-083. Comparison of dosimetric impact with setup errors in central dose increased irradiation for brain metastases using VMAT and HyperArc

Juntendo University Hinata Hikawa

E TPI-084. In silico randomized controlled trials using prediction models for tumor growth trajectories for patients with stage I non-small cell lung cancer for optimizing stereotactic body radiotherapy parameters

Kyushu University Masanobu Saeki

E TPI-085. A systematic review of electronic brachytherapy for intraoperative breast radiotherapy: Developments and challenges

Gono Bishwabidyalay, Bangladesh Md Mokhlesur Rahman

E TPI-086. Application and future direction of 3D printing and 3D bioprinting in X-ray and synchrotron radiation therapy medical physics

University of the Philippines Manila, Philippines John Paul O. Bustillo

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CT: Technique and Application

8:00–8:40 Chairperson: Shohei Kudomi
Hiroki Kawashima

E TPI-087. Preoperative visceral adipose accumulation and skeletal muscle density reduction predict adverse outcomes in kidney transplantation: A prospective cohort study

Sichuan University, China Yu Zhang

E TPI-088. Withdrawn

E TPI-089. Usefulness of non-respiratory-gated 4D-CT for irregular breathing patterns in estimation of internal target volume

Nihon University Itabashi Hospital Satoki Hinai

E TPI-090. Advantages and technical considerations of CT-derived lung volume quantification in canines

Tokyo University of Agriculture and Technology Kentaro Yamazaki

CT: Analysis and Others

8:50–9:30 Chairperson: Tomomi Ohmura
Shingo Ohira

E TPI-091. A simple algorithm for generating physical density image using clinical photon-counting computed tomography
Kanazawa University Rina Nishigami

E TPI-092. Quantitative analysis of pulmonary lesions using effective atomic number and physical density images generated by photon-counting CT
Okayama University Takashi Asahara

E TPI-093. Differentiation of gouty tophi from artifacts using advanced spectral parameters derived from dual-layer detector CT: A comparative study with conventional CT values
West China Hospital of Sichuan University, China Yiteng Zhang

E TPI-094. Image quality assessment using iterative and deep learning image reconstructions for four abdominal CT scanners at King Chulalongkorn Memorial Hospital: A phantom study
Chulalongkorn University, Thailand Amos Toka

Image Informatics: Generative AI-2

9:40–10:50 Chairperson: Shogo Baba
Akihiro Haga

E TPI-095. Evaluating image quality reproducibility using deep learning for exposure reduction in sparse-projection and low-dose CT images
Juntendo University Horiuchi Hyogo

E TPI-096. Ensemble learning of diffusion models for sparse-view CT reconstruction
Hirosaki University Sho Ozaki

E TPI-097. Boosting diffusion models for ultra-sparse-view CT reconstruction
Hirosaki University Yura Kimura

E TPI-098. Image quality improvement of dual-source cone-beam computed tomography using a conditional latent diffusion model
Kyoto University Ayane Nakanishi

E TPI-099. Impact of deformable registration on CBCT image quality improvement using diffusion-basedgenerative models
Kyoto University Mizuki Igarashi

E TPI-100. Fundamental study on DeepPET image reconstruction using GATE simulations modeling a LYSO scintillator array
Morinomiya University of Medical sciences Soichiro Kayo

E TPI-101. Image quality enhancement of low-dose PET/CT using a Pix2Pix-based deep learning model
Shingu University, Korea Juwon Lim

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Photon Therapy: RTPS

10:00–10:50 Chairperson: Kaoru Ono
Naoki Miyamoto

E TPI-102. Validation and implementation of magnetic resonance for calculating attenuation (MRCAT) in clinical brain applications
Chulabhorn Hospital, Chulabhorn Royal Academy, Thailand Pattarakan Suwanbut

E TPI-103. Assessment of AAA photon beam dose calculation performance affected by metallic implants in a thorax phantom study

Square Cancer Centre, Square Hospitals Ltd., Bangladesh Anwarul M Islam

E TPI-104. Scripting and knowledge-based automated planning for whole-brain radiotherapy with hippocampal sparing

Chulabhorn Hospital, Chulabhorn Royal Academy, Thailand Thunpisit Mundee

E TPI-105. Weight-optimized point cloud registration of CTV and OARs for accurate pancreatic radiotherapy alignment

Kyoto University Anna Goto

Proton Therapy: Dose Evaluation and Verification

11:00–11:40 Chairperson: Taeko Matsuura
Toshiyuki Toshito

E TPI-106. Assessment of initial proton beam parameters using GEANT4 simulation

Chulalongkorn University, Thailand Taitacha Thongkam

E TPI-107. Proton stopping power ratio estimation using simulated multi-modal image data with convolutional neural network

Tokyo Metropolitan University Izobelle E. Echaluse

E TPI-108. Noise reduction in protoacoustic range measurement using a linear array sensor: An initial study

Hokkaido University Nataporn Pinitkha

E TPI-109. CBCT-based dose tracking for head and neck proton therapy: evaluating cumulative dose deviation

Chulalongkorn University, Thailand Nay Chi Tun Aung

Image Informatics: Segmentation

13:10–14:00 Chairperson: Rie Tanaka
Takahiro Nakamoto

E TPI-110. Radiomics as non-linear local filters in deep learning: strengths and limitations

Tohoku University Shinichi Tanaka

E TPI-111. Zonal segmentation of prostate on multi-parametric magnetic resonance images using nnU-Net-based models

Kyushu University Zijian Li

E TPI-112. Preliminary study of deep learning-based automatic cardiothoracic ratio measurement in forensic pathology and sciences

Graduate School of Dongseo University, Korea Ingyeong Mun

E TPI-113. Development and validation of a clinically auditable, stepwise deep learning system that mimics radiologists for lumbar QCT HU/BMD measurement

Hokkaido University Zheyu Ye

E TPI-114. Carotid plaque segmentation in ultrasound images: Comparison of MambaUNet and various segmentation models

Meijo University Keita Mori

Image Informatics: Prediction

14:10–15:10 Chairperson: Keisuke Usui
Noriyuki Kadoya

E TPI-115. Evaluation of deformable image registration accuracy of VoxelMorph

Kyoto University Mizuha Sakai

E TPI-116. Tumor growth trajectory models for times to progression in lung cancer patients treated with tyrosine kinase inhibitor therapy

Kyushu University Kazusa Imamura

E TPI-117. Evaluating the impact of deep learning-based image denoising on low-dose CT for lung cancer screening

Kaohsiung Medical University, Taiwan Hsiao-Hua Liu

E TPI-118. Preliminary study for a deep learning-based sex estimation model using morphologic information of the maxillary sinus in Koreans

Graduate School of Dongseo University, Korea Kyeong Su Lee

E TPI-119. Prediction of preoperative MVI status in HCC patients based on a multiphase MR deep learning model

The First Affiliated Hospital of Fujian Medical University, China Hui Ma

E TPI-120. 2.5D deep learning radiomics based on Gd-EOB-DTPA MRI for predicting recurrence-free survival after curative resection of hepatocellular carcinoma

The First Affiliated Hospital of Fujian Medical University, China Jiayi Li

X-ray and Others

15:20–16:10 Chairperson: Nao Ichikawa
Sho Maruyama

E TPI-121. Study on the usefulness of modified posterior-anterior chest X-ray imaging according to thoracic kyphosis cobb's angle

Hanseo University, Korea Seungheon Lee

E TPI-122. Estimation of optimal image angle for pulmonary blood flow analysis in oblique dynamic chest radiography

Toyama University Hospital Tasuku Nakajima

E TPI-123. A noise reduction in quantitative effective atomic number images obtained from energy resolving photon counting detectors

Kanazawa University Daiki Kobayashi

E TPI-124. Foundational study on the safety of mammography in breast augmentation patients: Toward imaging guidelines and implant damage risk assessment

Hanseo University, Korea Hyoyoung Jeong

E TPI-125. Prevalence of breast cancer detection and abnormal characteristics in an asymptomatic screening mammography, a tertiary hospital experience

Khon Kaen University, Thailand Woranan Kirisattayakul