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

Oral

April 11 (Thu.) 502

Image Informatics: Classification & Detection

13:30～14:30　　Chairperson　Shota Ichikawa (Niigata University)

Noriyuki Kadoya (Tohoku University)

TPI-001　Subtype prediction in breast MR images using 3DCNN and ensemble learning　　　　　Meijo University　Ayaka Kawai

TPI-002　Imaging biopsy models for identification of triple-negative breast cancer at preoperative dynamic contrast-enhanced magnetic resonance images　　　　　　　　　　　　　　　　　　　　　　　　　　Kyushu University　Mayu Nakagaki

TPI-003　Visualization of discriminative features in MRI motion artifact classification using gradient-weighted class activation mapping

Juntendo University　Masafumi Akanuma

TPI-004　Deep learning for high risk and low risk ischemic strokes based on MRI images

University of Rajshahi, Bangladesh　Md. Alamgir Hossain

TPI-005　Automated detection of lung lesions in low dose CT images for attenuation correction using variational autoencoder

Meijo University　Yuki Ikuno

TPI-006　Slab-digitally-reconstructed radiographs inferred from X-ray fluoroscopic images　　　University of Tsukuba　Minori Takaoka

Image Informatics: Segmentation

14:40～15:30　　Chairperson　Yongsu Yoon (Dongseo University, Korea)

Jun'ichi Kotoku (Teikyo University)

TPI-007　3D body composition analysis via body cavity recognition in body CT images　　　Aichi Prefectural University　Kosuke Ashino

TPI-008　Automated segmentation scheme of highly update regions in dedicated breast PET images without manual annotation using Cycle GAN　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Meijo University　Juri Hayashi

TPI-009　Automatic segmentation and volume measurement of sphenoid sinus fluid in post-mortem CT images of drowning cases based on Deep learning　　　　　　　　　　　　　　　　　Busan Institute, National Forensic Service, Korea　Jin-Haeng Heo

TPI-010　Individual tooth segmentation using U-net based on dental X-ray panoramic images

Chonnam National University, Korea　Jihyeong Ko

TPI-011　Utilizing errors for data augmentation techniques to improve accuracy in segmentation of dental radiographic images

Chonnam National University, Korea　Seung-Min Kim

Education

15:40～16:30　　Chairperson　Hiroko Yamashina (Fukushima Medical University)

Shuichi Ozawa (HIPRAC)

TPI-012　Assessing the viability of integrating virtual reality programs in national examination practical tests for radiologic technologists: A nationwide survey of radiology department students　　　　　　　　　Daegu Health College, Korea　Jungsu Kim

TPI-013　Evaluation of the usefulness of nuclear medicine practice programs　　　　　　Shingu College, Korea　Yun-Sang Lee

TPI-014　The application value of Mini-CEX in the transfer training of imaging technicians

Affiliated Hospital of Jining Medical College, China　Han Wang

TPI-015　Analysis of the reliability of conversational artificial intelligence in the field of nuclear medicine using AI chatbots

Shingu College, Korea　Ha-ryun-sol Lee

TPI-016　Review of artificial intelligence methods in dental age estimation using panoramic radiograph image

Chonnam National University, Korea　Sasi Sooksatra

Radiomics

16:40～17:50　　Chairperson　Tatsuaki Kobayashi (Visionary Imaging Services, Inc.)

Hidetaka Arimura (Kyushu University)

TPI-017　Proposal of a differential diagnostic Index for of recurrent brain metastasis or radiation-induced brain necrosis by radiomics analysis using C-11 methionine PET　　　　　　　　　　　　　　　　　Tokushima University　Kanon Monda

TPI-018　　Mammography-based radiomics for prediction of axillary lymph node metastasis in invasive breast cancer
　　　　　　　　　　　　　　　　　　　　　　　　　Chulalongkorn University, Thailand　Wichasa Sukumwattana

TPI-019　　Recurrence prediction after radiation treatment in patients with esophageal squamous cell carcinoma using CT-based radiomics
　　　　　　　　　　　　　　　　　　　　　　　　　Chulalongkorn University, Thailand　Thanakrit Chanchayanon

TPI-020　　Novel radiomics/dosiomics-based treatment failure prediction for pharyngeal cancer patients
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Teikyo University　Hidemi Kamezawa

TPI-021　　Prognostic models for distant metastasis based on delta-radiomics features in patients with pancreatic carcinoma
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Kyoto University　Takanori　Adachi

TPI-022　　Homology-based -omics model for radiation pneumonitis in NSCLC stage III patients using whole-lung CT: A more comprehensive way in disease prognosis　　　　　　　　　　　　　　　　　　　　　Tohoku University　WingYi Lee

TPI-023　　Prediction of progression in patients with early-stage non- small cell lung cancer treated with surgery and stereotactic body radiotherapy　　　　　　　　　　　　　　　　　　　　　　　　Kyushu University　Takuto Fukano

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Nuclear Medicine: Performance Evaluation

8:00～8:40　　Chairperson　Kohei Hanaoka (Kindai University)
　　　　　　　　　　　　　　Keisuke Tsuda (Juntendo University)

TPI-024　　Feasibility of dual-time-point parametric imaging using dynamic ^{68}Gallium-prostate specific membrane antigen-11 (^{68}Ga-PSMA-11) PET/CT in prostate cancer patients　　　　　Chulalongkorn University, Thailand　Paphawarin Burasothikul

TPI-025　　Development of the next-generation WGI prototype with modified GAGG-CLS scatterer and fast-LGSO TOF absorber detectors
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　NIRS, QST　Go Akamatsu

TPI-026　　First demonstration of "Scratch-PET" for intraoperative PET with a hand-held probe-type detector
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Chiba University　Taiyo Ishikawa

TPI-027　　Imaging simulation of a next-version hemispherical brain PET powered by a novel DOI/TOF detector
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　NIRS, QST　Kurumi Narita

Nuclear Medicine: Simulation & Others

8:50～9:30　　Chairperson　Koichi Okuda (Hirosaki University)
　　　　　　　　　　　　　　Naotoshi Fujita (Nagoya University Hospital)

TPI-028　　Feasibility of Iodine-124 for positronium lifetime measurement with TOF-PET detectors　　　　NIRS, QST　Sodai Takyu

TPI-029　　A study on the use of assist device for convenience of upper extremity imaging during bone scanin bed-ridden patients
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Shingu College, Korea　Hyeon-Hee Lee

TPI-030　　Dual-panel PET system to be enabled by 30-ps super-fast detector: a preliminary simulation study　　　NIRS, QST　Taiga Yamaya

TPI-031　　Intra-tumoral biological washout-rate distribution in range-verification PET: a preliminary rat study with a ^{12}C-beam
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　NIRS, QST　Chie Toramatsu

Particle Therapy: Cardiac Implantable Electronic Device

9:40～10:10　　Chairperson　Hiroaki Matsubara (Fujita Health University)
　　　　　　　　　　　　　　　Takayuki Kanai (Tokyo Women's Medical University)

TPI-032　　Energy dependency on soft errors occurrence in carbon ion radiotherapy　　　　　　Gunma University　Shogo Shimizu

TPI-033　　Impact of treatment planning on soft error risk in carbon ion radiotherapy
　　　　　　　　　　　　　　　　　　　　　　Gunma University Heavy Ion Medical Center　Makoto Sakai

TPI-034　　Measuring the number of soft errors during proton and carbon ion radiotherapy　　　Gunma University　Reika Imazu

Particle Therapy: Imaging & Dosimetric Evaluation

10:20～11:10　　Chairperson　Naonori Hu (Osaka Medical and Pharmaceutical University, Kansai BNCT Medical Center)
　　　　　　　　　　　　　　　Satoshi Nakamura (National Cancer Center Hospital)

TPI-035　　A preliminary report of the first clinical study of OpenPET: in-beam range verification for carbon ion therapy
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　NIRS, QST　Hideaki Tashima

TPI-036　　Additive manufacturing technology in fabricating dosimetry phantoms for synchrotron radiation therapy
　　　　　　　　　　　　　　　　　　　　　University of Wollongong Australia, Australia　John Paul Bustillo

TPI-037　　Evaluation of dose calculation algorithm with a combination of Monte Carlo method and removal-diffusion equation for BNCT
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Kyoto University　Mai Nojiri

TPI-038   Structure optimization of a neutron dosimeter for BNCT irradiation field   Kyoto University   Liang Zhao

TPI-039   Development of multilayer liquid neutron spectrometer for neutron spectrum measurement in BNCT irradiation field

Kyoto University   Jakkrit Prateepkaew

MR: Technique & Analysis

16:00～16:50   Chairperson   Yasuo Takatsu (Fujita Health University)

Yuki Kanazawa (Tokushima University)

TPI-040   Perfusion and diffusion after preoperative endovascular embolization in meningioma using IVIM analysis

Kanazawa University   Li Ling

TPI-041   Analysis of cardiac function in standing and supine postures using Gravity MRI   Kanazawa University   Naoki Ohno

TPI-042   Assessing portal vein spongy alteration: a comparative study of non-enhanced MR venography with CT venography

Xi'an People's Hospital (Xi'an Fourth Hospital), China   Bao Liu

TPI-043   Prototype positron emission tomography (PET) insert combining proton (^{1}H) and sodium (^{23}Na) magnetic resonance imaging (MRI) radiofrequency coils for a 3 Tesla clinical MRI   NIRS, QST   Md Shahadat Hossain Akram

TPI-044   Microstrip transmission line radiofrequency coil combining positron emission tomography (PET) detector for a 7 Tesla magnetic resonance imaging (MRI) system   NIRS, QST   Md Shahadat Hossain Akram

Radiation Measurement

17:00～17:40   Chairperson   Hiroaki Hayashi (Kanazawa University)

Shinnosuke Matsumoto (Tokyo Metropolitan University)

TPI-045   Estimation of absorbed dose to testis during CT examination

Tokyo Medical University Ibaraki Medical Center   Masato Takanashi

TPI-046   A novel analysis method of surface dose taking into account the incident angle of X-rays during a helical scanning CT examination

Kobe Tokiwa University   Sota Goto

TPI-047   Improvement of crystal identification accuracy for depth-of-interaction detector system with peak-to-charge discrimination method

NHO Hokkaido Cancer Center   Kento Miyata

TPI-048   Verification of basic characteristics to fabricate flexible detectors using a 3D printer   Fujita Health University   Yuri Fukuta

Radiation Protection

17:50～18:30   Chairperson   Yohei Inaba (Tohoku University)

Yusuke Koba (NIRS, QST)

TPI-049   Optimization of male gonad dose in abdominal X-ray imaging: A phantom study

International Islamic University Malaysia, Malaysia   Inayatullah S. Sayed

TPI-050   The study on shielding methods to reduce dose to the breast, thyroid, and lungs during chest lateral radiography

Samsung Medical Center, Korea   Young Cheol Joo

TPI-051   Korean national CT diagnostic reference levels update using national dose index registry system

Daegu Health College, Korea   Jungsu Kim

TPI-052   A study on methods for reducing radiation dose to the breast, thyroid, and lungs during lateral chest radiography

Hanyang University Hospital, Korea   Soo Jin Lee

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X-ray: Technique & Analysis

8:00～8:50   Chairperson   Takeshi Takaki (Junshin Gakuen University)

Hiraku Kawamura (Gunma Prefectural College of Health Sciences)

TPI-053   Suitability of high tube voltage imaging for general radiography when using energy resolving photon counting detectors

Kanazawa University   Rina Nishigami

TPI-054   A correction method for image blurring to derive accurate quantitative material information using an energy resolving photon counting detector   Kanazawa University   Daiki Kobayashi

TPI-055   Image quality and dose criterion conformity analysis for evaluating utility of Scattered radiation removal processing on mobile X-ray machine   Shingu College of Seongnam, Korea   Ha-yeon Kim

TPI-056   Evaluation of usefulness of customized shielding plate in posteroanterior chest radiography for pregnant women

Kyung-Hee University Hospital at Gangdong, Korea   Chang-Hyun Lee

TPI-057   Investigation of optimal irradiation time in chest digital radiography: A virtual imaging trial   Kinan hospital   Jun Yamasaki

Proton Therapy

9:00～9:50　　Chairperson　Toshiyuki Ogata (Kyoto Prefectural University of Medicine)
Hidenobu Tachibana (National Cancer Center Hospital East)

TPI-058　Dosimetric comparison of planning methods in robustly optimized stereotactic body proton therapy for lung cancer considering interplay effects and setup uncertainty　　　　　Shonan Kamakura General Hospital　Akihiro Yamano

TPI-059　Dosimetric effect of uterine and ovarian doses in craniospinal irradiation using VMAT and SFUD depending on the bowel and bladder volumes　　　　　Juntendo University　Eiichi Maehara

TPI-060　Dose perturbations from gold marker in scanning proton therapy　　　　　The University of Aichi　Shiyu Hori

TPI-061　Perturbation correction factors for semiflex-type ionization chambers in proton beams using Monte Carlo simulation PHITS　　　　　Fujita Health University　Hiromu Ooe

TPI-062　3D prompt gamma imaging in a dual-head multi-slit system for proton beam range monitoring　　　　　Tsinghua University, China　Bo Zhao

Biophysics

10:00～10:30　　Chairperson　Kohei Sasaki (Hokkaido University of Science)
Akihiro Takemura (Kanazawa University)

TPI-063　Assessing tumor volume changes varying the dose delivery time using a novel mathematical model in stereotactic body radiation therapy for non-small cell lung cancer　　　　　Niigata University Medical and Dental Hospital　Hisashi Nakano

TPI-064　The unique expression of non-coding microRNAs in radioresistant fraction of acute promyelocytic leukemia HL60 cell　　　　　Hirosaki University　Kazuma Honda

TPI-065　Development of a robust predictive model for time variant trajectories of tumor growth in lung cancer patients treated with TKI　　　　　Kyushu University　Naoya Fuchiwaki

Photon Therapy: Dose Calculation & Evaluation

10:40～11:30　　Chairperson　Yoshitomo Ishihara (Japanese Red Cross Wakayama Medical Center)
Kenichi Ito (Tochigi Cancer Center)

TPI-066　Evaluation of the utility of CT image reconstruction using deep learning for treatment planning　　　　　The University of Aichi　Yuri Kasugai

TPI-067　Pioneering change in radiotherapy: The transition to biological adaptive radiotherapy (BART)　　　　　Hiroshima University　Daisuke Kawahara

TPI-068　Comparison of physical and biological dose optimization in dose accumulation with deformable image registration　　　　　Fujita Health University　Sota Tagawa

TPI-069　Physical and biological treatment plan evaluation of IMRT in the treatment of brain cancer　　　　　Gono University, Bangladesh　Sujan Mahamud

TPI-070　Tips for effective use in gEUD optimization objective while avoiding dose leverage effect: A case study for brain metastasis stereotactic radiotherapy　　　　　Kansai Medical University　Yusuke Anetai

Photon Therapy: IGRT & Dynamic Tumor Tracking

14:10～15:00　　Chairperson　Nobutaka Mukumoto (Osaka Metropolitan University)
Kaoru Ono (Hiroshima Heiwa Clinic)

TPI-071　Optimizing kV CBCT protocol for the abdomen on Varian Halcyon linear accelerator　　　　　Kaohsiung Municipal Siaogang Hospital, Taiwan　Hung-Te Yang

TPI-072　Inter-facility comparison of CT number-density conversion tables for Radixact　　　　　Shizuoka Cancer Center　Shogo Tsunemine

TPI-073　Optimizing patient and target position setup depending on respiration using MVCT　　　　　Japanese Red Cross Medical Center　Daiki Maruyama

TPI-074　Can synchrony eliminate the effects of setup errors?　　　　　Cancer Institute Hospital of JFCR　Satoko Saotome

TPI-075　Estimation of three-dimensional target positions from a single direction using orthogonal kV X-ray imaging subsystems for markerless tumor tracking　　　　　Kyoto University　Yukine Shimizu

Brachytherapy & Others

15:10～16:00   Chairperson   Yuki Otani (Kaizuka City Hospital)
Takashi Hanada (Keio University)

TPI-076   High dose rate brachytherapy for cervical cancer using an artificial neural network
University of Rajshahi, Bangladesh   Md. Alamgir Hossain
TPI-077   Gamma photon imaging in water for the quality assurance of high-dose-rate brachytherapy   Nagoya University   Katsunori Yogo
TPI-078   Characteristic evaluation of next generation scintillator dose distribution detector for patient QA and machine QA
The University of Tokyo Hospital   Takeshi Ohta
TPI-079   Improvement of body surface monitoring accuracy by installing multiple infrared depth cameras
Fujita Health University   Ryoma Tomoda
TPI-080   Development of the End-to-End phantom for comprehensive coordinate coincidence in multiple image guidance including infrared
depth camera   Fujita Health University   Rino Ota

Image Informatics: Processing

16:10～17:10   Chairperson   Hiroyuki Sugimori (Hokkaido University)
Akihiro Haga (Tokushima University)

TPI-081   Performance evaluation of ResNet model for noise reduction according to Gaussian noise level in nuclear medicine images
Eulji University, Korea   Min-Gwan Lee
TPI-082   A workflow for training DenseNet to reduce image noise in thin-sliced coronary artery calcium scans
Kaohsiung Medical University, Taiwan   Ching-Ching Yang
TPI-083   Uncertainty-based mixture of a deep image prior and an original reconstructed images in PET
Hamamatsu Photonics K.K.   Fumio Hashimoto
TPI-084   Iterative CT reconstruction with diffusion model   Hirosaki University   Sho Ozaki
TPI-085   A generative adversarial network based on Swin Transformer for reducing streak artifacts in sparse-view micro-computed
tomography   Chiba University   Takayuki Okamoto
TPI-086   Multi-modal learning from paired images: Feasibility study for super high-resolution model using DEXA and general radiographic
images   The Graduate School of Dongseo University, Korea   Hyejin Jo

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CT: Dose & Analysis

8:00～8:50   Chairperson   Takanori Masuda (Kawasaki University of Medical Welfare)
Shohei Kudomi (Yamaguchi University Hospital)

TPI-087   Convenient procedure to determine a dose reduction factor of the collar-type thyroid shield used for the chest CT examination
Yamaguchi University Hospital   Kazuki Takegami
TPI-088   Discrimination of non-metal dental material using photon counting CT toward identifying human remains
Okayama University Hospital   Takashi Asahara
TPI-089   A novel evaluation procedure of X-ray shielding ability by estimating X-ray incident direction during helical CT examination
Kanazawa University   Tatsuya Maeda
TPI-090   Study of various image reconstruction method on temperature resolution in CT-based thermometry
Kitasato University   Shinya Mizukami
TPI-091   Assessing superior vena caval obstruction syndrome: a comparative study of variable speed injection contrast enhanced CT-
venography with DSA   Xi'an People's Hospital(The No.4 Hospital), China   Xuanzi Wang