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

April 13 (Thu.)　　502

Radiomics

13:30-14:20　　　Chairperson: Akihiro Takemura
Satoru Utsunomiya

★ TPI-001　Topological Imaging Signatures with Tumor Volumes for Prediction of Distant Metastasis after Stereotactic Ablative Radiotherapy for Patients with Stage I Non-small Cell Lung Cancer
Kyushu University　　Takumi Kodama

★ TPI-002　Development of Radiomics-based Deformable Image Registration Algorithm
Iwate Medical University School of Medicine　　Yoshiro Ieko

★ TPI-003　Computed Tomography-based Radiomics for Classifying Neurological Prognosis of Cardiac Arrest Patients
Hokkaido University　　Takahiro Nakamoto

★ TPI-004　Investigation of Repeatability of Persistent Homology Features for Patients with Lung Cancer Based on Computed Tomography Images
Ho Chi Minh City Oncology Hospital, Viet Nam　　Quoc C. Le

★ TPI-005　Multi-institutional Radiomics Phantom Study Using on-board Volumetric Images
Kyoto University　　Takanori Adachi

Radiation Protection

14:30-15:20　　　Chairperson: Yasutaka Takei
Keiichi Akahane

★ TPI-006　Findings for Manufacturing Novel X-ray Shields Having Elasticity
Kanazawa University　　Tatsuya Maeda

★ TPI-007　A Study on Changes in Exposure Dose through Development of Bismuth Shielding during Pediatric General Radiography Examination
Hanseo University, Korea　　Beom Chan Park

★ TPI-008　Scattered Dose Rate Distribution and Eye Lens Doses of Physicians in over-couch X-ray Tube Geometry: Effect of Radioprotective Curtain Length
Kanazawa University　　Kosuke Matsubara

★ TPI-009　A Study on the Calculation of Entrance Surface Dose from Exposure Index as per IEC in Mobile Chest Radiography
The Graduate School of Dongseo University, Korea　　Hyejin Jo

★ TPI-010　Proposal of New Effective Dose Conversion Factor Using SSDE Obtained from Dose Index Resistry
Tokyo Medical University Ibaraki Medical Center　　Masato Takanashi

Image Informatics: Classification

15:30-16:20　　　Chairperson: Chisako Muramatsu
Taiki Magome

★ TPI-011　Production of X-ray Image Classification Software Using Convolutional Neural Network And Usability Assessment
Shingu College, Korea　　Yu-Jeong Lee

★ TPI-012　Deep Learning Based Gender Classification of Panoramic Dental X-ray
Chonnam National University, Korea　　Seung-Min Hwang

★ TPI-013　Pilot Study for Deep Learning-based Automatic Classification of Sphenoid Sinus among Head Post-mortem Computed Tomography Images in Drowning Victims

Busan Institute, National Forensic Service, Korea　　　Jin-Haeng Heo

★ TPI-014　Preliminary Study on the Classification if Atrial Fibrillation Types Using Deep Learning Models with Attention Mechanism - Comparion of Vision Transformer and CNN Model-

Fujita Health University　　　Hina Kotani

★ TPI-015　Deep Learning Based Nuclear Lung Test Classification Model

Shingu University, Korea　　　Min Ju Kim

Treatment Planning Computed Tomography

16:30-17:20　　　Chairperson: Noriyuki Kadoya
Yoshitomo Ishihara

★ TPI-017　Dosimetric Impact of Combined 4D-CT Ventilation and SPECT Perfusion Image-guided Treatment Planning for Lung Cancer

Komazawa University Graduate School　　　Genta Michimata

★ TPI-018　Characterization of a New X-ray Computed Tomography Polymer Gel Dosimeter

National Cancer Center Hospital East　　Hidenobu Tachibana

★ TPI-019　Comparison between Planning CT Image and Dose Distribution Signatures for Prediction of Radiation-induced Pneumonitis in Patients with Non-small Cell Lung Cancer before Stereotactic Ablative Radiotherapy

Kyushu University　　　Junya Eda

★ TPI-020　Determination of Initial Parameters of Stoichiometric CT Calibration MVCT Model

Hiroshima University　　　Shogo Tsunemine

Photon Dosimetry and Electron Irradiation Technique

17:30-18:20　　　Chairperson: Motoharu Sasaki
Chie Kurokawa

★ TPI-021　Evaluation of Beam Matching Accuracy Comparison for Same Model Linear Accelerator

Choonhae College of Health Sciences, Korea　　　Yonlae Kim

★ TPI-022　Investigation of Properties Related to BeO-based OSL Dosimeter Sensitivity in High-energy Photon Beam

Kanazawa University　　　Miku Ando

★ TPI-023　Investigation of High Precision of Electron Beam Convergence under Low Vacuum and Practicality of Decompression Chamber for Electron Beam Scanning Irradiation

Tokyo Metropolitan University　　　Yuma Hayashi

★ TPI-024　Design, Fabrication and Validation of 3D Printed Specific End Term Applicator for Electron Radiation Therapy

Labaid Cancer Hospital and Super Speciality Center, Bangladesh　　　Md Jobairul Islam

★ TPI-025　Study on Convergence Control and Convergence Distance of Electron Beam Using Multiple Solenoids

Tokyo Metropolitan University　　　Ryo Nishida

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Image Informatics: Segmentation

8:00-8:40　　　Chairperson: Haruyuki Watanabe
Noriyuki Kadoya

★ TPI-026　Two-stage X-ray-based Segmentation of Hip Joint Space Using Deep Learning

Hokkaido University　　　Haolin Wang

★ TPI-027　Novel Segmentation Model for Well-differentiated Hepatocellular Carcinoma Regions Using

Dense V-net with Three Phase Images of Dynamic Contrast-enhanced CT

Saga University Hospital   Noriyuki Nagami

★ TPI-028   Development of an Accurate and Rapid Auto-segmentation Method for Alveolar Bone and Teeth Using Virtual Cone-beam Computed Tomography and Artificial Intelligence Technology

Tokushima University   Atsushi Takeya

★ TPI-029   Rheumatoid Arthritis Synovitis Segmentation Based on Unsupervised Learning and Time-intensity Curve Signal Data on Dynamic Contrast Enhaced MRI

Hokkaido University   Yijun Mao

Image Informatics: Detection

8:50-9:30   Chairperson: Rie Tanaka
Jun'ichi Kotoku

★ TPI-030   Ensemble Detection Scheme of Pneumonia from Chest X-ray Images Using Multiple Convolution Neural Networks

Fujita Health University   Amase Ito

★ TPI-031   Improving Calcified Lesion Detection in Coronary Artery Calcium Scan by Using DenseNet: a Phantom Study

Kaohsiung Medical University, Taiwan   Ching-Ching Yang

★ TPI-032   The Implementation of Automated Intracerebral Hemorrhage Detection and Radiology Report Using Deep Learning

Chang Gung University, Taiwan   Yu-Pei Wang

★ TPI-033   A State-of-the-art Python Model for Breast Cancer Detection

Gono Bishwabidyalay, Bangladesh   Afroja Nahida

Nuclear Medicine-1: Performance Evaluation

9:40-10:20   Chairperson: Kohei Hanaoka
Hideaki Tashima

★ TPI-034   Evaluation of the Partial Volume Effects Using Small-sphere Phantom in PET/CT System

Iwate Medical University   Toshiaki Sasaki

★ TPI-035   Performance Evaluation of Body-contouring Scan in Lu-177 SPECT/CT with Ring-shaped Whole-body CZT-camera

Osaka University Hospital   Hidetaka Sasaki

★ TPI-036   Imaging Performance of a Brain-dedicated Hemispherical PET over Whole-body Cylindrical Scanners

QST   Go Akamatsu

★ TPI-037   Tracking the Same Fast-LGSO Crystals by Changing Surface Treatments for Faster Timing Resolution in PET

QST   Miho Kiyokawa

Nuclear Medicine-2: Simulation and Others

10:30-11:10   Chairperson: Koichi Okuda
Keisuke Tsuda

★ TPI-038   A Monte Carlo Simulation Study of Performance Evaluation for Sensitivity and Scatter Fraction in Gamma Camera Scintigraphy with TlBr Pixelated Semiconductor Detector Using Various Parallel-hole Collimator Designs

Eulji University, Korea   Chanrok Park

★ TPI-039   Potential of 909 keV Compton Imaging Outperforming PET in ^{89}Zr Measurement with Si/LGSO WGI: a Simulation Study

QST   Hideaki Tashima

★ TPI-040　Comparison of Kinetics of the Produced Positron Emitters after Carbon Beam Irradiation and That of the MRI Contrast Agents in Rat Tumor

QST　　　　　Chie Toramatsu

★ TPI-041　Positronium Lifetime Measurement in Stable Radical Aqueous Solutions for Dose Estimation in Radiotherapy

QST　　　　　Sodai Takyu

Image Informatics: Image Processing

15:30-16:20　　　Chairperson: Yoshikazu Uchiyama
Takeyuki Hashimoto

★ TPI-042　Development of a Deep Learning-based Bone Suppression Technique for Pediatric Dynamic Chest Radiography Using Virtual Patients

Kanazawa University　　　　Futa Goshima

★ TPI-043　Tube Deletion in Chest Radiograph Using Cycle Generative Adversarial Networks

Fujita Health University　　Supanuch Patipipittana

★ TPI-044　Development of Super-resolution for Brain MRI Images

National Taiwan University, Taiwan　　　Qian Hua Wu

★ TPI-045　Deep Learning Technology for Age Estimation Based on Selected Tooth Condition Using Dental Radiography

Chonnam National University, Korea　　　Jung-Woo Yun

★ TPI-046　Dental Estimation Age Using Darknet-19 Based on Dental X-ray Panoramic Images

Chonnam National University, Korea　　　Jihyeong Ko

MR: Analysis and Technique

16:30-17:20　　　Chairperson: Yasuo Takatsu
Koya Fujimoto

★ TPI-047　Quantifying Regional Cerebral Blood Flow Using Motion-compensated Diffusion Imaging with Phase-contrast (mDIP)

Kanazawa University　　　　Naoki Ohno

★ TPI-048　Evaluation of Submillimeter Non-rigid Registration for Diffusion Tensor Imaging Distortion Using CT Images

The Miyagi National Hospital　　　Tetsuya Kitazawa

★ TPI-049　Altered Functional Connectivity and Structural Connectivity in Patients with Focal Epilepsy Using Resting-state Functional MRI and Diffusion MRI

Chang Gung University, Taiwan　　　En-Chi Tsui

★ TPI-050　Optimization of Median Modified Wiener Filter for Improving Cerebrospinal Fluid Segmentation Performance in Brain MR Image: A Simulation Study

Gachon University, Korea　　　Sewon Lim

★ TPI-051　MR Spectroscopy-based Metabolite Ratio Analysis of MRI Images for Metastatic Lesion

University of Rajshahi, Bangladesh　　　Alamgir Hossain

Particle: Dosimetry and Monte Carlo Simulation

17:30-18:20　　　Chairperson: Chang Weishan
Shinnosuke Matsumoto

★ TPI-052　Investigation of Response Characteristics of Radiophotoluminescence Dosimeter in Intensity-modulated Proton Therapy

Fujita Health University　　　Miuna Hayashi

★ TPI-053　Simulation Evaluation of Range-estimation Uncertainty for Therapeutic Carbon-ion Beams by Measuring Secondary Electron Bremsstrahlung with a Large-pinhole X-ray Camera

Gunma University　　　Michiko Tsuda

★ TPI-054 Monte Carlo Calculation of Perturbation Correction Factor for Stem in Micro Ionization Chamber in Proton Beam

Fujita Health University　　　　Kaito Iwase

★ TPI-055 Measurement of the Nuclear Reaction Cross Sections of Positron-emitting Nuclides Using the Annihilation Gamma-ray Detection System nBOLPs

Osaka University　　　　Masaki Kato

★ TPI-056 Monte Carlo Calculations of Chamber-specific Perturbation Correction Factors for Several Ionization Chamber Types in Carbon-ion Beams

Tokyo Metropolitan University　　　　Yuka Urago

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Irradiation and Treatment Planning Technique

8:00-8:50　　　　Chairperson: Kaoru Ono
Shuichi Ozawa

★ TPI-057 Robust Beam Delivery with Jaw Margin Expansion in Small Field Linac-based Stereotactic Radiosurgery

Keio University School of Medicine　　　　Kohei Oguma

★ TPI-058 Optimal Setting of Virtual Bolus Method for Breast Cancer Treated with Volumetric Modulated Arc Therapy

The University of Tokyo　　　　Takumi Sakamoto

★ TPI-059 Evaluation of Dose Dividing Ratio in a Hybrid Volumetric Modulated Arc Therapy Plan for Non-small Cell Lung Cancer

Juntendo University　　　　Kenta Suga

★ TPI-060 Fundamental Evaluation of Brass Mesh Bolus in Photon Beam Therapy

Fujita Health University　　　　Honoka Inagaki

★ TPI-061 What is the Optimal Isodose Line for Stereotactic Radiotherapy for Brain Metastases Using HyperArc?　　　　Osaka International Cancer Institute　　　　Tomohiro Sagawa

Quality Assurance and Quality Control

9:00-9:50　　　　Chairperson: Naoki Kinoshita
Naoki Hayashi

★ TPI-062 Using Monte Carlo to Simulate Radioactive Materials, Ambient Dose Equivalent H(10) in Linacs Room in FF and FFF Mode

Kyushu University　　　　Soai Dang Quoc

★ TPI-063 A Study on Lifetime Prediction Using Linear Regression Analysis of Diode Electron Gun for a Linear Accelerator

Osaka Metropolitan University Hospital　　　　Tomohiro Sahara

★ TPI-064 Prediction of Vertebral Compression Fracture after Stereotactic Body Radiation Therapy for Spinal Metastases Using Radiomic and Dosiomic Features

Komazawa University　　　　Syoma Ide

★ TPI-065 Generating Fully Random Prediction Results of Patient-specific Quality Assurance

Hiroshima University Hospital　　　　Akito Saito

★ TPI-066 Prediction of Tumor Growth Trajectories in Patients with Stage I Non-Small Cell Lung Cancer Receiving Stereotactic Body Radio Therapy

Kyushu University　　　　Kazuki Mitsushima

Detector

10:00-10:50　　　　Chairperson: Yusuke Oribe
Keisuke Maehata

★ TPI-067　A Novel Function for Wearable Dosimeters: to Determine Both Incident Direction and Absolute Dose of X-rays during IVR Procedure

Kanazawa University　　　Takashi Asahara

★ TPI-068　Performance Evaluation Standards for Medical Compton Imaging Systems

QST　　　Go Akamatsu

★ TPI-069　Application of a Standard Performance Evaluation Method for a Cost-effective Compton Camera Using High-sensitive Inorganic Scintillators

QST　Mitsutaka Yamaguchi

★ TPI-071　Simulation Study of a Deep-Learning Based Position-Sensitive Forceps-type Coincidence Detector

QST　　　Ryotaro Ohashi

Particle: Treatment Planning Technique

14:10-14:50　　　　Chairperson: Hideyuki Mizuno
Akihiko Matsumura

★ TPI-072　Robustness Evaluation of Mean Liver Dose in Proton Therapy under Various Fractionation Scheme and Fraction-specific Random Setup Error

Hokkaido University　　　Koki Kasamatsu

★ TPI-073　Evaluation of the Proton Transport Algorithm in Monte Carlo Code PHITS by Fano Test

Fujita Health University　　　Yuya Nagake

★ TPI-074　Development of a DNA Damages Repair Model Considered Alternative Non-homologous End Joining

Osaka University　　　Hikaru Yamaguchi

★ TPI-075　Spatial Resolution of Compton Camera in BNC Reaction Imaging

Gunma University　　　Makoto Sakai

Particle: Evaluation of Implanted Electronic Device

15:00-15:40　　　　Chairperson: Taku Inaniwa
Taeko Matsuura

★ TPI-076　Evaluation of Air Quality in the Radiation Therapy Room

Hanseo University, Korea　　　Kim Dae hyun

★ TPI-077　Tolerable Doses of Electronic Devices in Radiation Therapy

Gunma University Hospital　　　Masami Miyajima

★ TPI-078　Evaluation of Electronic Device Soft Errors in Heavy Ion Therapy Using a Human Phantom

Gunma University Hospital　　　Hiroaki Masuda

★ TPI-079　Contribution Evaluation of Secondary Particles to Soft Errors in Carbon Ion Radiotherapy

Gunma University　　　Yudai Kawakami

Dosimetric Evaluation and Biophysics

15:50-16:30　　　　Chairperson: Masataka Oita
Hiroyuki Okamoto

★ TPI-080　Investigation of Longitudinal Magnetic Field Effects on OH Radical

Osaka University　　　Akiho Owada

★ TPI-081　Impact of Cherenkov Light Correction Methods and Small-field Effects on the Plastic Scintillation Detector

Komagome Hospital　　　Yu Arai

★ TPI-082 Evaluation of the Dosimetric Effect of Interfractional Motion Associated with a High-fluence Beam in a Low-density Area of the Planning Target Volume Using Intensity-modulated Radiation Therapy
    Juntendo University   Hiroto Adachi

★ TPI-083 High-Dose-Rate Brachytherapy for Cervical Cancer: The Effect of Total Reference Air Kerma on the Results of Single-Channel and Tri-Channel Applicators
    University of Rajshahi, Bangladesh   Alamgir Hossain

X-ray-2: Technique

16:40-17:30   Chairperson: Shinichiro Hirose
Nao Ichikawa

★ TPI-084 Cone-beam CT Hepatic Arteriography Image Comparative Evaluation According to the Dilution Ratio of Contrast Agent during Transarterial Chemoembolization
    Seoul National University Bundang Hospital, Korea   Changjoo Park

★ TPI-085 A Study on Image Quality and Dose Evolution According to Exposure Conditions in Ribs X-ray Imaging of Pediatric Patients
    Hanseo University, Korea   Ho-jun Choi

★ TPI-086 Development and Performance Evaluation of Improved X-ray Detector System for Whole Body Scanography Based on CsI Material
    General Graduate School of Gachon University, Korea   Minji Park

★ TPI-087 Development and Usefulness Evaluation of Auxiliary Device for Weight Bearing Radiography
    Choonhae College of Health Sciences, Korea   Junsik Oh

★ TPI-088 Using System Simulation Software Flexsim to Improve the Workflow Line-Taking the Radiology Department of a Hospital in Hsinchu, Taiwan as An Example
    The University of Hsinchu, Taiwan   Shih-Wei Tseng

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X-ray-1: Analysis

8:00-8:40   Chairperson: Takeshi Takaki
Kuniyuki Hidaka

★ TPI-089 A Correction Method for Object Edge Blurring That is Effective for Quantitative Analysis Using Photon Counting Imaging
    Kanazawa University   Daiki Kobayashi

★ TPI-090 Suitability of High-Tube-Voltage Imaging When Using Energy Resolving Photon Counting Detector (ERPCD): Simulation Study
    Kanazawa University   Rina Nishigami

★ TPI-091 A Study on Clinical Exposure Index Using Actual Clinical Data of Mobile Chest Radiography in University Hospital of Korea
    Dongseo University, Korea   Hyemin Park

★ TPI-092 Detection Performance of Pulmonary Impairments with Dynamic Chest Radiography: a Virtual Imaging Trial
    Kanazawa University   Shunya Yamaguchi

Radiation Measurement

8:50-9:30   Chairperson: Hiroki Saito
Hiroyuki Arakawa

★ TPI-093 Evaluation of Backscatter Factor by an Anthropomorphic Phantom for Pediatric in General Radiography
    Fujita Health University   Thanakrit Suebboonprathueng

★ TPI-094 Effect of Patient Position on Radiation Dose in Chest Lateral Radiography with AEC Mode

<div align="right">Hanseo University, Korea　　　Seung Uk Kim</div>

★ TPI-095　Analysis of Adjacent Organs Exposure Doses in X-ray Guided Stereostatic Breast Biopsy 2D Procedure and 3D Procedure

<div align="right">Samsung Medical Center, Korea　　　Beeeun Lee</div>

★ TPI-096　Feasibility Study of Optical Observation of the Boron Dose Distribution as a Quality Assurance Tool for Boron Neutron Capture Therapy

<div align="right">Kyushu University　　　Hideya Maeda</div>

CT-1: Analysis

<div align="right">9:40-10:20　　　Chairperson: Takanori Masuda
Shohei Kudomi</div>

★ TPI-097　Quantitative Measurement of Small Pulmonary Vessel Volume to Evaluate Right Ventricular Function in Patients with Acute Pulmonary Embolism

<div align="right">General Hospital of Ningxia Medical University, China　　　Yifan Wang</div>

★ TPI-098　Verification of CT Contrast Enhancement Effect by a Systemic Circulating Vascular Phantom

<div align="right">Kitasato University　　　Tatsuya Todoroki</div>

★ TPI-099　Study of Noise Reduction Effect on Temperature Resolution in CT-based Thermometry

<div align="right">Kitasato University　　　Shinya Mizukami</div>

★ TPI-100　Spectral Imaging Performance Evaluation for a Prototype Full-size Photon Counting CT System at Clinical Dose Levels

<div align="right">Canon Medical Research, USA　　　Xiaohui Zhan</div>

CT-2: Dose and Technique

<div align="right">10:30-11:10　　　Chairperson: Katsuhiro Ichikawa
Hiraku Kawamura</div>

★ TPI-101　Establishment of National Diagnostic Reference Levels and Achievable Doses for CT Protocols in Korea

<div align="right">Daegu Health College, Korea　　　Jaesung Kim</div>

★ TPI-102　Thyroid Dose Reduction Related to the Overranging Effect by Using a Novel Sponge-type Shield during High-pitch Chest CT Examination

<div align="right">Kanazawa University　　　Kazuki Takegami</div>

★ TPI-103　Quantitative Image Quality Comparison between Normal Resolution and Super High Resolution Modes of a Clinical Prototype Photon Counting CT System

<div align="right">Canon Medical Research USA Inc., USA　　　Ruoqiao Zhang</div>

★ TPI-104　Estimating the Artifact Correction Integrity of MAR in Different Density of Metal Tooth Prosthesis

<div align="right">Chang Gung Memorial Hospital, Taiwan　　　Yin-Chun Lin</div>

Image Informatics: Reconstruction

11:20-12:00 Chairperson: Ikuo Kawashita
Akihiro Haga

★ TPI-105 Iterative CT Reconstruction with Deep Neural Networks
Hirosaki University Sho Ozaki

★ TPI-106 Subject-specific Deep Learning Reconstruction for Fast Free-breathing Cardiac Perfusion MRI
University of Minnesota, USA Mehmet Akcakaya

★ TPI-107 Development of a Method for Improvement of SPECT Images Reconstructed from Sparse Projection Data by Deep Learning Technique
Hiroshima International University Reina Yano

★ TPI-108 End-to-end Unsupervised CNN-based PET Image Reconstruction with Relative Difference Penalty
Hamamatsu Photonics K.K. Fumio Hashimoto

Image Informatics: Prediction

14:00-14:40 Chairperson: Atsushi Teramoto
Hidetaka Arimura

★ TPI-109 A Study on a Predictive Model for Renal Stone Diagnosis Based on Artificial Neural Network
Gimcheon University, Korea. Jang Hye-won

★ TPI-110 Automated Response Prediction of the Extracorporeal Shock Wave Lithotripsy Using Abdominal CT Images
Fujita Health University Yuta Suganuma

★ TPI-111 Prognoses Prediction of NSCLC Patients with CT Image Features Linked with Gene Expression
Kyushu University Yu Jin

★ TPI-112 Artificial Neural Network for Prediction Model of Histological Subtypes for Breast Cancer Using 18F-FDG PET/CT
University of Rajshahi, Bangladesh Alamgir Hossain

Ultrasound

14:50-15:20 Chairperson: Yuhei Wada
Naoyuki Imada

★ TPI-113 Application of YOLO-based Deep Learning to Thyroid Ultrasound Imaging
Shingu University, Korea Min Ju Kim

★ TPI-114 An End to End Based Computer-aided Diagnosis System for Automatically Quantify the Activity of Rheumatoid Arthritis.
Hokkaido University Yumeng Yan

★ TPI-115 Optimization of Window Size for Noise Reduction Filter in Simulated Ultrasound Image
Gachon Universtiy, Korea Hajin Kim