

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

April 14 (Thu.) 502

MR : Brain

16 : 10 ~ 16 : 50 Chairman Kenichiro Yamamura (Tokushima Bunri University)

Norio Hayashi (Gunma Prefectural College of Health Sciences)

- TPI-001 MRI Thermometry Using Diffusion Tensor Imaging for Postoperative Brain Temperature Monitoring
Juntendo University Shuhei Shibukawa
- TPI-002 Variable Flip Angle T_1 mapping without Acquiring Data for B_1 Correction Tokushima University Nagomi Fukuda
- TPI-003 Decoding the Cortical Complexity of Bilateral DLPFC with Multi-scale Morphometric Analysis
The Chinese University of Hong Kong, Hong Kong Hanna Lu
- TPI-004 Variability of the Corpus Callosum with Gender among the Nepalese Population
National Academy of Medical Sciences, Nepal Anjan Dangal

MR : Miscellaneous

17 : 00 ~ 17 : 50 Chairman Kousaku Saotome (Fukushima Medical University)

Tatsuya Hayashi (Graduate School of Medical Technology, Teikyo University)

- TPI-005 Multi-parameter Evaluations in a Canine Induced Disc Degeneration Model Using MRI and Macroscopic Observation
Tokai University Hospital Susumu Takano
- TPI-006 Evaluation of Clinical Utility of Free-breathing Dynamic Contrast Imaging Using Gadoteric Acid with Golden-angle-Radial-Sampling and a Compressed Sensing Method Toranomon Hospital Kei Fukuzawa
- TPI-007 Comparing the Clinical Usefulness of Gradient-Echo Sequence and Spin-Echo Echo Planar Imaging Sequence in Magnetic Resonance Elastography Toranomon Hospital Ryouna Abe
- TPI-008 Radiomic Feature-based Prediction Model for Malignancy Grade of Parotid Gland Cancer in Preoperative Magnetic Resonance Images Yamaguchi University Hospital Kojiro Ikushima
- TPI-009 A Study of Ateration in Image Quality According to the Technique Corrections During MRI Examination
Hanseu University, Korea Jin Young Lee

April 15 (Fri.) 502

Diagnostic Technology-1

8 : 00 ~ 9 : 00 Chairman Masatoshi Kondo (Kiyusyu University Hospital)

Kenta Takada (Gunma Prefectural College of Health Sciences)

- TPI-010 Study of CT-based thermometry for visualizing the human body on thermal resolution Kitasato University Shinya Mizukami
- TPI-011 Development of dynamic x-ray elastography using laboratory x-ray source and synchrotron radiation for soft tissues and soft materials
High Energy Accelerator Research Organization (KEK) Chika Kamezawa
- TPI-012 Gender Estimation from Foramen Magnum Using 3D Computed Tomography Scan Images
National Academy of Medical Sciences, Nepal Anjan Dangal
- TPI-013 Age Estimation Using Deep Learning with MIP Images of the Spine in Postmortem CT Scans
Hiroshima University Ikuo Kawashita
- TPI-014 Usefulness of Fluid Assessment in Sphenoid Sinus Based on Post-mortem Computed Tomography in Cases of Suspected Drowning
Busan Institute, National Forensic Service, Korea Jin-Haeng Heo
- TPI-015 A Fundamental Study of Image Quality Assessment in CBCT Images with Non-Reference Image Quality Metrics Modeled by Radiation Images
Osaka City University Hospital Yusuke Torada

CT : Deep Learning

9 : 10 ~ 10 : 00 Chairman Shohei Kudomi (Yamaguchi University Hospital)
Wakiko Tani (Kobe University Hospital)

- TPI-016 Lung Age Estimation of Low-dose Chest CT Images Based on Deep Learning Kanazawa University Hiroto Mori
TPI-017 Calculation of Lung Volume in 45,337 Cases of Low-dose Chest CT Using the U-net Kanazawa University Keiichi Kato
TPI-018 Variation of CT Value Depending on Position in the X Direction in the Gantry Meijo Hospital Tomomi Yato
TPI-019 Automated Detection of Insufficiency Fracture of the Pelvis on Radiograph : Preliminary Study on the Automated Detection of Artificial Fracture Line Using Convolutional Neural Network Fujita Health University Fumiaki Oba
TPI-020 Automated Lung Nodule Detection Using Mask R-CNN in PET/CT Images Fujita Health University Yuki Oshita

Radiotherapy: Imaging

10 : 10 ~ 11 : 00 Chairman Hideyuki Takei (Tsukuba University)
Shinichiro Mori (QST)

- TPI-021 Withdrawn
TPI-022 Novel scattered X-ray model for cone-beam computed tomography Tokushima University Yuki Inoue
TPI-023 A generative cone-beam computed tomography model Tokushima University Taisei Shimomura
TPI-024 Comparison of the matching accuracy between 5 different deformable image registration algorithms Fujita Health University Masato Horita
TPI-025 Exploring the re-planning protocol to manage inter-fractional organ movement during a course of intensity modulated radiation therapy for cervical cancer Kyoto University Yukako Kishigami

The 1st ICRPT Opening Ceremony

11 : 20 ~ 11 : 50

The 1st ICRPT Special Invited Lecture

12 : 10 ~ 13 : 00 Chairman Rie Tanaka (Kanazawa University)

- TPS The Future of Medical Physics Duke University Ehsan Samei

Radiotherapy : Miscellaneous

15 : 40 ~ 16 : 10 Chairman Takahiro Kato (Fukushima Medical University)
Keisuke Yasui (Fujita Health University)

- TPI-026 Dose Estimation for Cone Beam CT in Image-Guided Radiation Therapy Using Mesh-type Reference Computational Phantoms and Assuming Head and Neck Cancer for Patient Kyushu University Ceyda Cumur
TPI-027 Evaluating and Modeling of Beam Attenuation by a Carbon Fiber Treatment Couch for Management of Kilovoltage Imaging Doses during Image-guided Radiotherapy Kurashiki Central Hospital Junya Miyata
TPI-028 Phosphatidylcholine, a Predictive Biomarker of Therapeutic Effect for Bone Metastasis from Castration-resistant Prostate Cancer Hirosaki University Megumi Kikuchi

Radiotherapy : Deep Learning

16 : 20 ~ 17 : 00 Chairman Ryo Kakino (Osaka Medical and Pharmaceutical University)
Taiki Magome (Komazawa University)

- TPI-029 Auto-segmentation of Important Centers of Growth in the Pediatric Skeleton to Consider During Radiation Therapy Based on Deep Learning Shandong Cancer Hospital and Institute Shandong First Medical University and Shandong Academy of Medical Sciences, China Wenlong Qiu
TPI-030 Withdrawn
TPI-031 Feasibility study of deep learning-based markerless real-time tumor tracking for patients with lung cancer Kyoto University Dejun Zhou
TPI-032 Development of Prediction Model for Head and Neck Volume Reduction by Clinical Factors and Radiomics in Head and Neck Cancer Tohoku University Miyu Ishizawa

Image Informatics: Prediction

17 : 10 ~ 18 : 10 Chairman Taiki Magome (Komazawa University)
Noriyuki Kadoya (Tohoku University)

- TPI-033 Prediction of Short-Term Prognosis of CCU Patients Using Visualizable CNN in ECG Images Fujita Health University Terumasa Kondo

TPI-034	Combining clinical data with CT image in deep learning for outcome prediction of oropharyngeal cancer recurrence	Komazawa University	Shogo Fukuda
TPI-035	Prediction of Time Variant Trajectory of Lung Tumor Growth during TKI Targeted Therapy	Kyushu University	Rintaro Furuta
TPI-036	A Radiogenomic Signature for Prediction of Lung Cancer Prognosis : Association Between HOPX Gene Expression and CT Image Features	Kyushu University	Yu Jin
TPI-037	Radiomic classification of severity caused by coronavirus disease 2019 pneumonia based on CT images	The University of Tokyo Hospital	Takahiro Iwasaki
TPI-038	Automated Detection of Gastric Polyps from Endoscopic Images Using U-net	Fujita Health University	Ayana Sugiura

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Quality Assurance

8 : 00 ~ 8 : 50 Chairman Hiroyuki Okamoto (National Cancer center Hospital)
Chie Kurokawa (Juntendo University)

TPI-039	Withdrawn		
TPI-040	The control of electron beams using yoke and cavity iron core solenoids	Tokyo Metropolitan University	Hayata Sakamoto
TPI-041	Development of Stoichiometric calibration method for MVCT to MD table on Tomotherapy	Hiroshima University	Shogo Tsunemine
TPI-042	Evaluation of a New Independent Dose Verification Software SciMoCa for Prostate and Head and Neck Cancer Plans with Helical TomoTherapy	Komazawa University	Kaito Sakai
TPI-043	Development of independent dose calculation system for a second-check dose calculation for spot scanning proton therapy	Nagoya City University West Medical Center	Toshiyuki Toshito

Radiotherapy: Planning

9 : 00 ~ 9 : 50 Chairman Hideki Takegawa (Kansai Medical University)
Toshiyuki Ogata (Kyoto Prefectural University of Medicine)

TPI-044	Effect of Slice Thickness on Estimating Lung Volume in Lung Resection Analysis by Phantoms	National Cancer Center Hospital East	Amon Ohsawa
TPI-045	Radiobiological evaluation considering the treatment time with CyberKnife stereotactic radiosurgery for brain metastases	Niigata University Medical and Dental Hospital	Hisashi Nakano
TPI-046	Lead shield with ARM optimization effectively suppress mandible dose in HDR brachytherapy for tongue cancer	Osaka University	Hiroya Shiomi
TPI-047	Validity of two robust radiobiological optimization algorithms based on the mixed beam model for intensity modulated carbon-ion therapy	Osaka University	Masashi Yagi
TPI-048	Construction of backup solutions for patients who treat with Elekta Unity using Fallback planning module of RayStation	Chiba University	Kota Abe

Radiation Measurement and Detector

10 : 00 ~ 10 : 50 Chairman Hiraku Iramina (Kyoto University)
Yusuke Oribe (Niigata University of Health and Welfare)

TPI-049	Bone and Soft-tissue Image Generation Method Based on One Shot X-ray Exposure Using a Photon-counting Detector	Kanazawa University	Cheonghae Lee
TPI-050	Phantom Study of CZT Photon-counting BMD Detector	Korea University, Korea	Beomjun Park
TPI-051	Plastic scintillation dosimeter with a conical mirror for measuring 4D dose distribution	Chiba University	Masato Tsuneda
TPI-052	Evaluation of detection accuracy for moving objects with an infrared depth camera	Fujita Health University	Daisuke Yamanaka
TPI-053	Development of a compact non-invasive detector for high dose-rate ¹⁹² Ir source movement	Shimane University	Hiroyuki Arakawa

Diagnostic Technology-2

13 : 10 ~ 14 : 00 Chairman Takeshi Hara (Gifu University)
Sho Ozaki (The University of Tokyo Hospital)

TPI-054	Detection of elevated pulmonary arterial wedge pressure using chest X-ray image by convolutional neural network	Teikyo University	Takumasa Tsuji
TPI-055	Automated Extraction of Carotid Plaque by U-Net in Ultrasound Images	Fujita Health University	Gakuto Hirano

- TPI-056 A Predictive Model for Patient Functional Outcomes of Cerebral Infarction Using Weakly Supervised Learning with an Attention Mechanism on MR Images Fujita Health University Yudai Higashi
- TPI-057 Prediction of Answers in Fill-in-the-blank Questions Using BERT in Radiological Technology Field Hokkaido University of Science Ayako Yagahara
- TPI-058 Respiratory Phase Analysis of Dynamic Chest Radiographs for Facilitating Image-based Pulmonary Function Diagnosis Kanazawa University Rentaro Tanimoto

Image Informatics : Virtual Imaging Trials (VIT)

14 : 10 ~ 15 : 10 Chairman Ehsan Samei (Duke University)

Rie Tanaka (Kanazawa University)

- TPI-059 Virtual Imaging Trial to Determine Detection Performance of Pulmonary Impairments with Dynamic Chest Radiography Kanazawa University Shunya Yamaguchi
- TPI-060 Virtual Imaging Trial for Optimization of Imaging Conditions in Pediatric Dynamic Chest Radiography Kanazawa University Rie Tanaka
- TPI-061 Development of Deep Learning-based Mediastinum Suppression Technique for Dynamic Chest Radiography Using Virtual Patients Kanazawa University Ryuichi Nagatani
- TPI-062 Development of a Deep Learning-based Bone Suppression Technique for Dynamic Chest Radiography Using Virtual Patients Kanazawa University Futa Goshima
- TPI-063 Deep Learning-Based Lung Volume Estimation with Dynamic Chest Radiography : A Virtual Imaging Trial Kanazawa University Nozomi Ishihara
- TPI-064 Deep-Learning-Based Detection of Motion Blur Due to Body Motion : A Virtual Imaging Trial Kanazawa University Shiho Nozaki

Biology: Dosimetry and Simulation

15 : 20 ~ 16 : 20 Chairman Satoshi Kito (Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital)

Wei Shan Chang (Tokyo Metropolitan University)

- TPI-065 The effect of high dose-rate irradiation on cell survival : simple investigation with the cultured cells Fujita Health University Maki Kurimoto
- TPI-066 Optimization of irradiation interval for fractionated stereotactic radiotherapy by an in-silico cell model Hiroshima University Daisuke Kawahara
- TPI-067 Reduction of sub-lethal damage repair effect in spot-scanning proton therapy : An attempt to use the intensity modulation Hokkaido University Hikaru Hosoi
- TPI-068 Treatment Planning on Carbon Ion Radiotherapy for Prostate Cancer Based on Cellular Experiments of PC3 Human Prostate Cancer Cell Line Osaka Heavy Ion Therapy Center Yushi Wakisaka
- TPI-069 Establishing the commissioning system for verifying the clinical dose of Intensity Modulated Ion Therapy Osaka University Naoto Saruwatari
- TPI-070 Prediction of cell survival using track-structure Monte Carlo simulation NIRS, QST Dousatsu Sakata

BNCT and Neutron Dosimetry

16 : 30 ~ 17 : 30 Chairman Takahiro Kato (Fukushima Medical University)

Satoshi Nakamura (National Cancer center Hospital)

- TPI-071 Study on the improvement of neutron distribution by overlapping of irradiation fields using intensity moderators in accelerator-based BNCT Kyoto University Akinori Sasaki
- TPI-072 Design, verification, and application of a filtration system to improve the dose distribution of an accelerator-based neutron capture therapy system Osaka Medical and Pharmaceutical University Naonori Hu
- TPI-073 Commissioning of a treatment planning system used for clinical BNCT and validation against an independent Monte Carlo dose calculation system Osaka Medical and Pharmaceutical University Naonori Hu
- TPI-074 Verification of complementary approach using full-energy Monte Carlo method and partial model-based method for fast dose calculation in BNCT Kyoto University Mai Nojiri
- TPI-075 Comprehensive evaluation of dosimetric impact against setup errors in accelerator-based BNCT with different treatment parameter settings Osaka Medical and Pharmaceutical University Ryo Kakino
- TPI-076 Evaluation of dose equivalent by secondary neutrons generated by head proton therapy Nagoya University Yuta Kobayashi

April 17 (Sun.) 502
Nuclear Medicine-1

8 : 00 ~ 9 : 00 Chairman Seiichi Yamamoto (Nagoya University)

Tomoyuki Hasegawa (Kitasato University)

- TPI-077 Fast analytical PET simulation toward in vivo range monitoring for scanned proton beam Osaka University Takamitsu Masuda
- TPI-078 Concept and clinical impact of an intraoperative forceps-type coincidence detector for intraoperative lymph node diagnosis using
FDG NIRS, QST Miwako Takahashi
- TPI-079 CLS-PET : a high-resolution portable small-animal PET with a 20 cm axial FOV NIRS, QST Go Akamatsu
- TPI-080 Development of a TOF helmet-type PET scatter correction method with image-domain interpolation and subtraction
NIRS, QST Hideaki Tashima
- TPI-081 Performance comparison of offline PET systems for visualization of a heavy-ion microbeam NIRS, QST Hideaki Tashima
- TPI-082 Experimental assessment of completeness condition for WGI Compton image reconstruction NIRS, QST Hideaki Tashima

Nuclear Medicine-2

9 : 10 ~ 9 : 40 Chairman Yasuhiko Okura (Hiroshima International University)

Koichi Okuda (Kanazawa Medical University)

- TPI-083 Noise Reduction in Dedicated Breast PET Images Using a Deep Denoising Filter Bank
East Nagoya Image Diagnosis Center Masahiro Tsukijima
- TPI-084 Compensating Positron Range Effects of Ga-68 in Preclinical PET Imaging by Using Convolutional Neural Network : a Monte
Carlo Simulation Study Kaohsiung Medical University, Taiwan Ching-Ching Yang
- TPI-085 Evaluation on the Usefulness of ROI Setting for Multi-gated Cardiac Blood Pool Scan Based on Deep Learning
Shingu University, Korea Yu-Jeong Lee

Nuclear Medicine-3

9 : 50 ~ 10 : 30 Chairman Kenta Miwa (Fukushima Medical University)

Kouhei Hanaoka (Institute of Advanced Clinical
Medicine, Kindai University)

- TPI-086 Shielding Ability of Tungsten Apron during Lu-177 DOTATATE Therapy Kanazawa University Hospital Hiroto Yoneyama
- TPI-087 Evaluation of a Hybrid Small Animal PET/MRI Requiring a Device to Solve Image Fusion Problems
Iwate Medical University Toshiaki Sasaki
- TPI-088 Is Bayesian Penalized Likelihood Reconstruction without Point-Spread-Function Correction Appropriate for Amyloid PET Imaging?
Kitasato University Kei Wagatsuma
- TPI-089 FDG Healthy Volunteer Imaging with the World's First Helmet-type Brain PET
National Institutes for Quantum Science and Technology (QST) Go Akamatsu

Diagnostic Technology-3

10 : 40 ~ 11 : 20 Chairman Hiroko Yamashina (Fukushima Medical University)

Shinichiro Hirose (Osaka University Hospital)

- TPI-090 Usability and Image Evaluation of Nasal Tangential Projection Using Glabellar Lines Shinhan University, Korea Yeju Jeong
- TPI-091 Optimization of Automatic In-house Software for Detecting the Joint Destruction in RA Patients Using Reliability Index
Hokkaido University Taichi Okino
- TPI-092 Development of Medical Assistive Device Using 3D Printer for Chest AP Examination
Shinhan University, Korea Gyeong-won Baeg
- TPI-093 Evaluation of Emphasis of Noise Suppression Processing Technology Using Structural Similarity Index
Kyushu University Nobukazu Tanaka

Radiation Protection

11 : 30 ~ 12 : 00 Chairman Kosuke Matsubara (Kanazawa University)

Takashi Ohba (Fukushima Medical University)

- TPI-094 Improvement of Micro-densitometry Method Using a Sheet Which Has X-ray Shielding Ability
Kanazawa University Miku Ando
- TPI-095 Verification of Dose Reduction Using Gonad Shielding in Hip Joint Radiography Kyoto University Hospital Saki Nozoe
- TPI-096 The Usefulness of a Shielding Gown Designed for General Photography of Infants and Toddlers
Choohae College of Health Sciences, Korea Sewon Yoon

Particle Therapy: Simulation and Experiment

14 : 00 ~ 15 : 00 Chairman Akito Saito (Hiroshima University)

Akihiko Matsumura (Gunma University)

- TPI-097 Evaluation of dose distributions for the layer-stacking conformal irradiation under internal anatomical structural changes
Gunma University Yuki Hasebe
- TPI-098 Development of beam axis correction method with position feedback system Yamagata University Hikaru Souda
- TPI-099 Reduction of detector misalignment errors in ionoacoustic range detection by using a miniature laser interferometer hydrophone
Hokkaido University Shota Sueyasu
- TPI-100 A Study on Evaluation Method of Proton Pencil Beam Irradiation Position Accuracy Using Self-Activated Image Information
Osaka University Masaki Kato
- TPI-101 Range uncertainties for MRI-only treatment planning with convolutional neural network in particle therapy
Yamagata University Takayuki Kanai
- TPI-102 Establishment of evaluation method for fragmentation model in heavy ion therapy energy
Tokushima University Yoshihide Sato

Particle Therapy: Imaging and Measurement

15 : 10 ~ 16 : 10 Chairman Keisuke Maehata (Teikyo University)

Hikaru Souda (Yamagata University)

- TPI-103 Prompt gamma imaging in BNCT using a Compton camera Gunma University Heavy Ion Medical Center Makoto Sakai
- TPI-104 Optical imaging of dose distribution by $^{10}\text{B}(n, \alpha)^7\text{Li}$ reaction using boron-added liquid scintillator for boron neutron capture therapy
Kyushu University Hideya Maeda
- TPI-105 Development of fast neutron detection method discriminating gamma-ray events with single ionization chamber in BNCT field
Kyoto University Nishiki Matsubayashi
- TPI-106 Examination on dose-rate dependence of water luminescence for irradiation of therapeutic carbon-ion at lower energy than Cerenkov-light threshold
Kyushu University Yuki Nagatomo
- TPI-107 Luminescence imaging of water irradiated by protons under FLASH radiation therapy conditions
Nagoya University Katsunori Yogo
- TPI-108 The perturbation factor of plane-parallel chamber to Scanning proton beams : A monte carlo study
Fujita Health University Hironari Kumazaki