【General Session】

April 16 (Thu.)　418

Machine Learning & Mathematical Modeling 1

11:00–11:50　Chairperson: Daisuke Kawahara
Yoshiro Ieko

POP-001. Development of an RPA system using a single-board microcontroller
Medipolis Proton Therapy Center　Yasumasa Kakinohana

POP-002. Visualization of nonlinearity in image reconstruction using nonlocal means filter as regularization
Tokyo Metropolitan University　Hiroyuki Shinohara

POP-003. Development of deep learning-based dose conversion model using generative adversarial network in proton beam therapy
Southern Tohoku Proton Therapy　Ryohei Kato

POP-004. Preliminary study on optimization of training weights for deep learning-based auto-contouring of OARs in cervical and endometrial cancer brachytherapy planning
Tohoku University　Akari Niiyama

POP-005. The necessity of conventional geometric image transformation compared to deep learning models
University of Tsukuba　Nao Yoneda

April 16 (Thu.)　419

QA/QC

11:00–11:50　Chairperson: Hideyuki Takei
Yoshinori Tanabe

POP-006. Evaluation of a CT-ED conversion table QA method using an anthropomorphic phantom with the dual-energy subtraction technique
National Hospital Organization Nagasaki Medical Center　Shotaro Ito

POP-007. Quantitative analysis of linear accelerator failures using a text-extraction application from service reports
Osaka International Cancer Institute　Yoshihiro Ueda

POP-008. Expanding the application sites of methods using calculated MU values in carbon-ion radiotherapy: Validation in pancreatic cancer treatment
Ion Beam Therapy Center, SAGA HIMAT Foundation　Kentarou Tamura

POP-009. Verification of ultra-high-resolution whole-body dose distribution in helical VMAT-TBI and systematic framework toward clinical implementation
The University of Tokyo Hospital　Takeshi Ohta

POP-010. Feasibility study of novel scintillation plate dosimeter for stereotactic body radiotherapy quality assurance
Tokyo Metropolitan University　Honoka Sugaya

April 16 (Thu.)　418

Executive Committee Program 1「Student Best Presentation Award – JSMP Student Grand Prix –」

13:00–14:30　Chairperson: Yoshikazu Maeda
Keisuke Yasui

POP-011. Selection of the optimal physics model for Monte Carlo simulation of secondary neutron in proton beam therapy
Nagoya University　Kazuki Toida

POP-012. Dynamic prognostic modeling of HCC after proton beam therapy using a GRU-ODE-Bayes Time-Series radiomics framework
Hiroshima University　Misato Kishi

POP-013. Investigation of leakage current without irradiation in reference-class ionization chambers
Hiroshima University　Ryoko Akeno

POP-014. Development of an empirical RBE calculation model in various cell types toward realization of high-precision carbon-ion radiotherapy
International University of Health and Welfare　Ryosuke Akimoto

POP-015. Development of machine learning driven patient specific QA system for carbon ion radiotherapy
Yamagata University　Ayaka Yamada

POP-016. A study on a method for evaluating wide-area dose distribution in carbon ion radiotherapy using Monte Carlo simulation
Tokyo Metropolitan University　Yuta Hirai

POP-017. Scanned particle-beam tracking with multi-step temporal prediction-based beam correction
Hokkaido University　Fumika Nakamura

POP-018. End-to-end AI-driven IMRT planning for prostate cancer: from auto-segmentation to deliverable plans without TPS optimization
Hiroshima University　Yudai Uno

POP-019. A reconstruction method for reducing multiple coulomb scattering artifacts in heavy-ion CT imaging
The University of Osaka　Hinatsu Chihara

Executive Committee Program 2「Congress President's Award – MedP Grand Prix –」

14:40–15:40　Chairperson: Toshiyuki Toshito
Hidenobu Tachibana

POP-020. Toward vibe coding in radiation therapy: A benchmark of local LLM code generation capabilities
The University of Osaka　Hiroya Shiomi

POP-021. End-to-end test of online MR-guided adaptive radiotherapy using multimodal and deformable anthropomorphic male pelvic phantom
Tokyo Metropolitan University　Masato Nishitani

POP-022. End-to-end audit of skin-markless surface-guided radiation therapy: multi-institutional validation results
University of Yamanashi　Masahide Saito

POP-023. Evaluation of silicon detectors for linear energy transfer measurements of therapeutic helium, carbon, oxygen, and neon ion beams
QST　Taku Inaniwa

POP-024. Compartment model incorporating chemotherapy effects to predict lymphocyte depletion in NSCLC radiotherapy
Hitachi, Ltd.　Koichi Miyazaki

POP-025. Robustness evaluation and enhancement in LETd optimized multi-ion therapy
QST Takamitsu Masuda

Machine Learning & Mathematical Modeling 2

15:50–16:50 Chairperson: Takahiro Nakamoto
Keiichiro Matsushita

POP-026. Prediction of local failure after stereotactic body radiotherapy for bone metastases using radiomics and dosiomics
Komazawa University Sato Takahashi

POP-027. CT radiomics-based prediction of cognitive function following whole brain radiation therapy
Niigata University Mitsuki Kitazawa

POP-028. Evaluating the capability of large language models in radiotherapy through professional certification examinations in Japan
Tohoku University Hikaru Tanno

POP-029. Development of an automatic GTV segmentation model for early-stage lung cancer using fractal structure-based transfer learning
Tohoku University Ryota Tozuka

POP-030. A study on absorption models and computational efficiency in the Near-Infrared Monte Carlo photon transport
Hokkaido University Kakeru Izumi

POP-031. Improving the accuracy of real-time markerless lung tumor segmentation using target style domain adaptation
University of Tsukuba Hospital Fumiaki Komatsu

April 16 (Thu.) 419

Radiation Dosimetry and Measurement

15:50–16:50 Chairperson: Takashi Hanada
Makoto Sakama

POP-032. Development of dynamic tumor tracking accuracy verification system for a gimbaled linac system
Narita Memorial Hospital Masaya Ichihara

POP-033. A development of absorbed dose standard for proton beams using a graphite calorimeter
National Metrology Institute of Japan Yuka Urago

POP-034. Monte Carlo calculation of perturbation correction factors in proton beams using the latest small volume ionization chamber
Fujita Health University Momoka Miwa

POP-035. Development of a high-sensitivity omnidirectional rotating Compton camera with an extended energy range for environmental monitoring : Geant4 simulation
Kitasato University Kosuke Okubo

POP-036. Evaluation of the average variation of output factors at SSD of 90cm and depth of 10cm as the reference data
Varian Medical Systems Katsutomo Tsujii

POP-037. Characterization of pulse repetition frequency using a high-temporal-resolution plastic scintillation detector
Aichi Cancer Center Hospital Tomoki Kitagawa

April 17 (Fri.)　418

Machine Learning & Mathematical Modeling 3

9:00–9:50　Chairperson: Takehiro Shiinoki
Yujiro Nakajima

POP-038. Model initialization with pretrained-weight injection for medical image segmentation
University of Tsukuba　Harumitsu Takano

POP-039. Automated optimization of prostate VMAT treatment planning using the model-based reinforcement learning framework dreamerV3
Kyorin University　Syunsuke Tomonaga

POP-040. Deciphering the mechanistic basis of FLASH effect variability via in-silico modeling of oxygen, fibrosis, and cytokine interactions
Hiroshima University　Daisuke Kawahara

POP-041. Mid-Treatment GTV auto-segmentation informed by pre-treatment MRI for head-and-neck adaptive radiotherapy
Hiroshima University　Masaki Nagao

POP-042. Multimodal ensemble survival modeling for glioblastoma: An innovative framework integrating sequence-specific radiomic risks
Hiroshima University　Yuzuha Kadooka

April 17 (Fri.)　419

Radiation Therapy (Particle Therapy) 1

9:00–10:10　Chairperson: Sodai Tanaka
Makoto Sakai

POP-043. Commissioning of SOI microdosimeter for the evaluation of dose-averaged linear energy transfer of carbon, oxygen and neon ion beams
QST Hospital　Taku Nakaji

POP-044. Application of dynamic multi-leaf collimator in intensity-modulated proton therapy for head and neck cancer: dosimetric evaluation and experimental verification
Osaka Proton Therapy Clinic　Yushi Wakisaka

POP-045. Feasibility study of uninterrupted continuous delivery in real-time gated proton therapy
Shonan Kamakura General Hospital　Masashi Yamanaka

POP-046. Patient-specific 4D dynamic dose analysis for reasonable gating levels in respiratory-gated scanning proton therapy for lung cancer
Osaka Proton Therapy Clinic　Mayu Nakata

POP-047. Scintillation imaging for measuring LET distribution of proton beams
Nagoya University　Yutong Ge

POP-048. Prediction of field factors based on residual range in broad-beam proton therapy
Medipolis Proton Therapy and Research Center　Taiki Isomura

POP-049. Determination of the optimal energy pair for stopping power ratio estimation in particle therapy using dual-energy CT
Ion Beam Therapy Center, SAGA HIMAT Foundation　Naoki Hayashi

April 17 (Fri.)　418

Radiation Biology

10:00–10:50　Chairperson: Yutaka Takahashi
Yoshitaka Matsumoto

POP-050. Assessment of patient-specific radiosensitivity using head and neck tumor-derived organoids : correlation analysis with genetic information
Fujita Health University　Hiyori Hara

POP-051. Comparison of gene expression after irradiation between radioresistant and highly radiosensitive cell lines using RNA-seq
Nagoya University　Yoshiyuki Hirano

POP-052. Simulation study on indirect actions in carbon-ion and electron irradiation toward molecular-level understanding of radiation effects
Nagoya University　Yoshiyuki Hirano

POP-053. Assessment of bismuth nanoparticles as radiation sensitizers in a clonogenic assay using HeLa cells
Nagoya University　Himari Takahashi

POP-054. Research on the biological effects of therapeutic-dose proton irradiation in live fish
The University of Osaka　Kentaro Hakamada

April 18 (Sat.)　419

Radiation Therapy (Photon, Electron, Brachytherapy, and Nuclear Medicine) 1

10:00–11:10　Chairperson: Shuichi Ozawa
Mikoto Tamura

POP-055. Evaluation of an averaged dose calculation model for clinical feasibility and performance in volumetric modulated arc therapy treatment planning
Chiba Cancer Center　Ryohei Miyasaka

POP-056. Evaluation of deformable image registration for thoracic CT images using the default parameters of elastix
International University of Health and Welfare　Komei Funayama

POP-057. Evaluation of a biaxially rotational radiotherapy technique in stage III lung cancer
Aichi Cancer Center Hospital　Ryoma Tomoda

POP-058. Development of 3D collision detection software for external radiotherapy using LiDAR scanning
Kitasato University Hospital　Kentaro Takahashi

POP-059. Evaluation of image-based predictors for optimal replanning timing in head and neck IMRT
Kobe University Hospital　Naritoshi Mukumoto

POP-060. Development of high-precision geometric calibration technology for medical linear accelerators
Izumi City General Hospital　Shigeo Anai

POP-061. Examination of energy dependence of two types of TG51-addendum reference class dosimeters
Aomori Rosai Hospital　Koji Ishita

Radiation Therapy (Photon, Electron, Brachytherapy, and Nuclear Medicine) 2

15:50–17:00　Chairperson: Satoshi Kito
Masahide Saito

POP-062. Estimation of effective dose from fluoroscopy in 125I seed brachytherapy
Tokyo Medical University Ibaraki Medical Center　Masato Takanashi

POP-063. A trade-off analysis between plan complexity and dosimetric quality in VMAT planning
Niigata University Kanta Horie

POP-064. Lattice-shield array imaging for source localization in high-dose-rate brachytherapy
Kyushu University Hiroyuki Arakawa

POP-065. Difference in 4DCT-based lung ventilation images using normal and deep inspiration depths
Niigata University Miho Matsuo

POP-066. Dosimetric characteristics of hybrid intracavitary/interstitial brachytherapy using the Geneva applicator for gynecologic cases
Tohoku University Yoshiyuki Takahashi

POP-067. A proposed complexity metric for brachytherapy source motion
Juntendo University Daito Sakurai

POP-068. Development of extended virtual phantom set for enhancing adaptability in zero-prep MR-linac workflow
Tohoku University Koki Nakajo

April 19 (Sun.) 418

Diagnostic Imaging

10:40–11:30 Chairperson: Shingo Ohira
Hidetake Hara

POP-069. Feasibility study of a medical visualization platform via simultaneous acquisition and spatiotemporal integration of CT and photogrammetric 3D models
Sapporo Kojinkai Memorial Hospital Daisuke Tanii

POP-070. Simultaneous dual-energy imaging using photon-counting X-ray computed tomography with Fourier analysis
Iwate Medical University Hospital Yuichi Sato

POP-071. Study on a novel imaging method using high-spatial-resolution dual-energy X-ray computed tomography
Iwate Medical University Eiichi Sato

POP-072. Quasi-monochromatic embossed X-ray computed tomography using pixel-shifted subtraction
Iwate Medical University Eiichi Sato

POP-073. PHITS-based simulation of a silicon-scintillator stacked detector for next-generation spectral CT
Kyorin University Ryota Toino

April 19 (Sun.) 419

Radiation Therapy (Particle Therapy) 2

10:40–11:50 Chairperson: Yuya Miyasaka
Yuya Azuma

POP-074. Deep learning-based dose prediction in proton beam therapy for hepatocellular carcinoma: Comparison of loss functions
Southern Tohoku Proton Therapy Center Shuta Ogawa

POP-075. Evaluation of uniform irradiation field formation in synchrotron-based ultrahigh-dose rate proton therapy
Nagoya City University West Medical Center Hideto Kino

POP-076. Initial simulation study on proton beam imaging with flat panel detector and mosaic-pattern range modulation filter
Hokkaido University Ryoya Sakai

POP-077. Determination of fabricating threshold for a mesh ripple filter in heavy-ion therapy
Juntendo University Shu Fujita

POP-078. The effect of phantom differences on Monte Carlo simulation for neutron dose equivalent in proton therapy
Nagoya University Ginga Nakahara

POP-079. Effect of titanium cranial hardware on dose distribution in a proton scanning beam at various angles
Tokyo Metropolitan University Haruhito Watanabe

POP-080. MR imaging for MR image guided proton therapy under actual proton therapy environment
Sumitomo Heavy Industries, Ltd., Technology Research Center Nagaaki Kamiguchi