

## 【General Session】

April 11 (Thu.) 418

### Measurement 1

13:10–14:00

Chairperson: Yuichi Akino

- POP-001. Effect of image acquisition parameters on the accuracy of dose distribution measurements of X-ray CT polymer gel dosimeter  
National Cancer Center Hospital East Kazuya Seki
- POP-002. Evaluation of dose response of large-area  $\text{Al}_2\text{O}_3:\text{Cr},\text{Si},\text{Mg}$  thermoluminescence dosimeter using high-energy X-rays  
Kitasato University Shoki Nakamura
- POP-003. Patient QA pre-practice test of helical irradiation type VMAT with next generation scintillator dose distribution detector  
The University of Tokyo Hospital Takeshi Ohta
- POP-004. Feasibility simulation study for searching robust measurement point in non-isocentric planning  
Sapporo Kojinkai Memorial Hospital Daisuke Tanii

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### Radiation Biology

13:10–14:10

Chairperson: Yutaka Takahashi

- POP-005. Investigating the prediction of radio-sensitivity from genetic variant data  
Nagoya University Yoshiyuki Hirano
- POP-006. Application of a model to describe radiation-induced cell death - Consideration on mixed irradiation -  
University of Tsukuba Takeji Sakae
- POP-007. Evaluation of maximum dose and dose-averaged LET for radiation-induced optic neuropathy in carbon-ion radiotherapy for head and neck cancers  
International University of Health and Welfare Rei Ishikawa
- POP-008. Investigation of oxygen concentration changes after carbon ion beam using Geant4-DNA  
Nagoya University Yoshiyuki Hirano
- POP-009. Development of biological model for hypo-fractionated multi-ion therapy treatment planning  
QST Taku Inaniwa

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### QA, QC

14:10–15:00

Chairperson: Tadanori Abe

- POP-010. Report on confirmation of dose distribution due to version upgrades of the treatment planning system  
Tohoku University Haruna Takahashi
- POP-011. A study on sensitivity adjustment of monitor dosimeters using MPC  
Aomori Shintoshii Hospital Tadaaki Tominaga
- POP-012. Analysis of beam control in different delivery modes with high-speed plastic scintillator detector  
Imamura General Hospital Mamoru Ichiki
- POP-013. A practical solution to mitigate lateral response artifact in film dosimetry using image combination  
Hiroshima High-Precision Radiotherapy Cancer Center Hideharu Miura

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**Diagnosis CT**

**14:20–15:10**

**Chairperson: Hidetake Hara**

- POP-014. Studies on energy-dispersive X-ray computed tomography utilizing beam hardening  
Iwate Medical University Hospital Yuichi Sato
- POP-015. Prospective evaluation of non-contact, remote upright CT for lung imaging: Comfortability,  
efficiency and radiation dose compared to conventional supine CT  
Keio University Minoru Yamada
- POP-016. Photon counting X-ray computed tomography with high spatial resolutions  
Iwate Medical University Eiichi Sato
- POP-017. Gadolinium K-edge X-ray computed tomography using a tantalum filter  
Iwate Medical University Eiichi Sato

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**SGRT, AI**

**15:10–16:00**

**Chairperson: Kazuya Shinoda**

- POP-018. Effect of slice thickness for DICOM reference surface on positioning accuracy in surface guided  
radiotherapy  
Hamamatsu University Yusuke Ueshima
- POP-019. Investigation of image data preprocessing to improve accuracy in deep learning-based in predicting  
cardiac dose reduction in DIBH technique  
Komazawa University Syuka Nishina
- POP-020. Calculation of lens dose from cone-beam CT during head and neck IGRT using Monte Carlo  
simulation  
Ibaraki Prefectural University of Health Sciences Ren Yazawa
- POP-021. Quality assurance and quality control of SGRT systems based on guidelines  
St. Lukes International Hospital Ryohei Yamauchi

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**Measurement 2**

**15:20–16:10**

**Chairperson: Kiyomitsu Shinsho**

- POP-022. Evaluation of decreased dose response by X-ray damage of small spherical diode dosimeter  
Tokyo Metropolitan University Ren Abukawa
- POP-023. Evaluation of dose rate dependency in small spherical diode dosimeter  
Tokyo Metropolitan University Masaya Watanabe
- POP-024. Determination of block factor for output dose audit using BeO dosimeter  
Komazawa University Shion Narumi
- POP-025. Development of a GPU-based Monte Carlo photon transport code for near-infrared  
photoimmunotherapy  
Hokkaido University Kakeru Izumi

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### RT Technology

16:10–17:00

Chairperson: Harumitsu Hashimoto

- POP-026. Prediction vertebral compression fracture after stereotactic body radiotherapy for spinal metastases using radiomics and dosiomics features  
Komazawa University Syoma Ide
- POP-027. Feasibility study of Robust optimization for uncertainty in CT values  
Juntendo University Sota Takauji
- POP-028. Development of photon-tracking-based quasi-analytical multi leaf collimator transport calculation method for independent dose verification  
Hitachi, Ltd. Shusuke Hirayama
- POP-029. Dosimetric effects of immobilization devices on spine SBRT  
Komazawa University Hana Endo
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### High Precision Radiotherapy

09:00–09:50

Chairperson: Mitsuhiro Nakamura

- POP-030. Verification of 4D propagation accuracy of GTV in lung SBRT using deformable image registration  
Fujieda Municipal General Hospital Yoshihiro Kawai
- POP-031. A simulation-based evaluation of interplay effect in volumetric modulated radiation therapy with respiratory motion  
Niigata University Rin Suzuki
- POP-032. Measurement of delay-time for gated irradiation in a medical linear accelerator  
National Cancer Center Hospital East Kenji Hotta
- POP-033. Effects of aperture shape controller on VMAT planning for postmastectomy radiotherapy  
Komazawa University Takumi Sakamoto

### Dosimetry and Simulation

10:00–10:50

Chairperson: Hayato Tsuno

- POP-034. Robustness of helical IMRT for PMRT - Virtual bolus study -  
Accuray Japan K. K. Yuta Kobayashi
- POP-035. Assessment of deformably generated synthetic CT in CBCT-based online ART for head and neck cancer  
Kyushu University Hospital Yusuke Shibayama
- POP-036. Correlation between variation of DVH parameters and delta-radiomics features of EPID-measured fluence map with MLC positional error  
Niigata University Yusuke Watanabe
- POP-037. Robust optimization for uncertainty in shoulder position in volumetric modulated arc therapy for head and neck cancer treatment  
Juntendo University Ryo Watanabe

**AI (Radiotherapy) 1**

11:00–11:50

**Chairperson: Takaaki Hirose**

- POP-038. Comparison of two different deep learning-based automatic contouring software for prostate cancer patients  
Tohoku University Senri Hayashi
- POP-039. Evaluation of automated treatment planning software using deep learning for advanced lung cancer patients  
Tohoku University Takeru Nakajima
- POP-040. Development of MVCA-Planning (Multi-Vendor Compatible AI Planning) for elimination of cancer-care disparities for radiation therapy  
Tohoku University Masaki Kondo
- POP-041. Development of automated contouring AI with human feedback function using stacking ensemble and partial training for head and neck radiotherapy  
Kyorin University Kentaro Miki

**April 12 (Fri.) 419****Particle 1**

16:10–17:10

**Chairperson: Yuto Matsuo**

- POP-042. Development of fast and accurate deep learning-based dose calculation algorithm in proton therapy  
Southern Tohoku Proton Therapy Center Ryohei Kato
- POP-043. Comparisons of dose distributions, irradiation time, and optimization time for various beam parameters in arc proton pencil beam scanning  
Osaka Proton Therapy Clinic Yuki Tominaga
- POP-044. Availability of beam log data based dose distribution in proton beam scanning irradiation for patient QA  
Osaka University Yudai Tokuhiro
- POP-045. A study of acquisition of carbon ion CT image using BGO scintillator and CMOS camera  
Osaka University Kei Komatsubara
- POP-046. In silico study of LET optimization toward clinical trial for multi-ion particle therapy for bone and soft tissue sarcomas  
QST Hideyuki Takei

**April 13 (Sat.) 418****AI (Radiotherapy) 2**

09:00–09:50

**Chairperson: Yuichiro Narita**

- POP-047. Development of a gamma passing rate prediction method using plan complexity features for virtual patient-specific QA  
Hitachi, Ltd. Koichi Miyazaki
- POP-048. Validation of Monte Carlo Geant4 multi-threading efficiency for LINAC therapeutic beams on Windows platform  
Keio University Takashi Hanada
- POP-049. Study of predicted dose distribution in multi volume using slice stacking and shape emphasizing AI for automation of treatment planning  
Kyorin University Jin Okuno
- POP-050. How to evaluate the high dose-gradient region: A proposition method using Lie derivative  
Kansai Medical University Yusuke Anetai

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Particle 2

10:00–11:00

Chairperson: Toshiyuki Toshito

- POP-051. Spot position verification for patient-specific QA using log file  
Narita Memorial Proton Center      Kyotaro Tsuzuki
- POP-052. Overview of commissioning for linear energy transfer painting with carbon-ion therapy  
QST Hospital, QST      Hideyuki Mizuno
- POP-054. Commissioning of microdosimeter with linear energy transfer painting with scanned carbon-ion radiotherapy  
QST Hospital, QST      Taku Nakaji
- POP-072. Measurement of linear energy transfer with microdosimeter in patient-specific quality assurance of carbon-ion radiotherapy  
QST      Katsumi Aoki
- POP-055. Preparation of experiment environment for heavy ion FLASH and its application to the creation of 3D modulated FLASH dose distribution  
QST      Koki Kasamatsu
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Brachytherapy (Miscellaneous)

09:00–10:00

Chairperson: Yu Kumazaki

- POP-056. Priority of linear accelerator quality assurance after an earthquake using Failure mode and effects analysis  
Varian Medical Systems      Katsutomo Tsujii
- POP-057. Development toward a domestic RALS: Characteristics and clinical evaluation of offset Gd-153 sources  
Osaka University      Hiroya Shiomi
- POP-058. Improving the accuracy of high dose-rate Ir-192 source 3D position detection by machine learning  
Kyushu University      Hiroyuki Arakawa
- POP-059. Survey results for 'Connecting Youth and Professionals in Medical Physics'  
Chiba University      Masato Tsuneda
- POP-060. Verification of TBI dose distribution by Radixact using ArcCHECK  
University of the Ryukyus      Masashi Kinjyo

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Radiomics

09:00–09:50

Chairperson: Takahiro Nakamoto

- POP-061. A feasible study for classification of acute radiation-induced xerostomia risk based on a dosiomics  
Hokkaido University      Sora Takagi
- POP-062. Interpretable radiomics: Deciphering biochemical signatures through radiogenomics  
Hiroshima University      Yuzuha Kadooka
- POP-063. Development of hybrid CNN-transformer model for synthesizing multi-contrast MR images of stroke patients and detectability evaluation through segmentation  
Hiroshima University      Kota Hirose
- POP-064. Discrimination of the pulmonary nodules using the chest CT image features by homology method  
Osaka University      Akira Sato

**April 14 (Sun.) 418****BNCT****10:10–11:00****Chairperson: Hiroki Tanaka**

POP-065. Neutron energy spectrum estimation method using thermal neutron flux distribution in water phantom

Hokkaido University Yutaro Ikeda

POP-066. Measurement for the neutron beam of iBNCT001, a linac-based BNCT demonstration device in Tsukuba

University of Tsukuba Hiroaki Kumada

POP-067. Accelerating simulation of epithermal neutron dose distribution using deep learning

Osaka University Shotaro Nishikawa

POP-068. Research on surface neutron dose distribution measurement technology in BNCT

Osaka University Yusuke Nakanishi

**April 14 (Sun.) 419****Particle 3****10:10–11:00****Chairperson: Takeji Sakae**

POP-069. Simple quality assurance of monitor unit when changing treatment room

Ion Beam Therapy Center, SAGA HIMAT Foundation Takeshi Himukai

POP-070. Improvement of multiple safety barrier for multi-ion therapy with event tree analysis

QST Sodai Tanaka

POP-071. Roadmap to the first multi-ion therapy for head and neck cancer using carbon-, oxygen-, and neon-ion beams

QST Takamitsu Masuda

POP-053. Four-dimensional respiratory movement of liver at supine and standing positions for upright radiotherapy

QST Yusuke Nomura