【General Session】
April 13 (Thu.) PACIFICO Yokohama Conference Center 418

1. Radiation Therapy (photon/electron) 1 (IMRT/VMAT1) 13:00-13:50 Moderator: Yukio Fujita

★ 0-001 Dose error prediction based on the dose uncertainty accumulation of intensity-modulated radiation therapy
Hospital of UOEH Eiji Shiba

0-002 Evaluation of dosimetric impact of the jaw position displacement in jaw tracking VMAT
Juntendo Univ. Toru Kawabata

★ 0-003 PHITS Monte Carlo-dose verification of VMAT treatment plan with HD120MLC
Kumamoto Univ. Naoki Nagaishi

0-004 Statistical analysis of patient-specific IMRT quality assurance
Ryukyus Univ. Masashi Kinjyo

0-005 Feasibility study of transferring patients to a matched linear accelerator in case of machine breakdown in IMRT and VMAT plans
NCCHE Hidenobu Tachibana

2. Radiation Therapy (photon/electron) 2 (IMRT/VMAT2) 14:00-15:00 Moderator: Seiichi Ota

★ 0-007 Comparison of VMAT and 3-D CRT treatment plans in multiple brain metastases
Kumamoto Univ. Naoto Yamaura

★ 0-008 Dosimetric accuracy of dose calculation algorithms for VMAT in multiple brain metastases
Kumamoto Univ. Kento Hoshida

0-009 Impact of different MLC controls in volumetric modulated arc therapy for total body irradiation (VMAT-TBI)
Tokyo Metropolitan Univ. Yuta Takahashi

0-010 The analysis of the effect of implanted metal in spine for Volumetric Modulated Arc Therapy
Osaka Univ. Reimi Taniguchi

★ 0-011 Comparison of 3D CRT and the Jaws-Only IMRT (JO-IMRT) planning parameters for head-and-neck cancer
Dong Nai Hosp. Tai Duong Thanh

★ 0-012 Evaluation of Jaws-Only Intensity Modulated Radiation Therapy Treatment Plans using Octavious 4D System
Dong Nai Hosp. Tai Duong Thanh

3. Radiation Therapy (photon/electron) 3 (IMRT/VMAT3) 15:10-16:10 Moderator: Akihisa Wakita

0-013 The model-based estimation of rectal dose in volume modulated arc radiotherapy for prostate cancer
OMCC Yoshihiro Ueda

★ 0-014 Quantitative analysis for coldspots in dose distributions of IMRT for prostate cancer
Univ. of Kyushu. Ryosuke Asamura

★ 0-015 Impact of shape variation on PTV margins in IMRT for prostate cancer
Kyushu Univ. Hosp. Takaaki Hirose

★ 0-016 Planning study for esophageal cancer: A dosimetric comparison of conformal radiotherapy, VMAT and Hybrid-VMAT
OMCC Masayoshi Miyazaki

★ 0-017 Advantage of FFF beam compared to FF beam for VMAT-SBRT plans in lung tumor
Kumamoto Univ. Naoto Yamaura

★ 0-018 A comparison between dose calculation algorithms for VMAT-SBRT plans in lung tumor
Kumamoto Univ Takanori Matsuoka
4. Radiation Therapy (photon/electron) 4 (Respiratory Gating and Tracking Technique)  
16:10-17:00  Moderator: Shuichi Ozawa

0-019  Basic study of respiratory gated irradiation using FFF beam  
Toho Univ. Sakura Medical Center  
Teruo Ito

0-020  A simple quality assurance system for respiratory-gated radiotherapy using pulse information from linac  
Komazawa Univ.  
Tomoyuki Karasawa

0-021  Assessment of tracking accuracy by detecting laser position using CMOS camera in CyberKnife  
NCCH  
Hiroyuki Okamoto

0-022  Investigation of uncertainty in 4D dose accumulation for lung SBRT  
Tohoku Univ.  
Ryutarou Ikeda

0-023  Design and development of a non-rigid phantom that ventilates air for the quantitative evaluation of CT-based pulmonary ventilation imaging  
Komazawa Univ.  
Shin Miyakawa

5. Medical Image and Information  
17:10-17:50  Moderator: Atsushi Myojoyama

0-024  Automatic chest X-ray screening with a deep neural network  
Teikyo Univ.  
Junichi Kotoku

0-025  Development of patient recognition system for radiotherapy  
Tokyo Metropolitan Univ.  
Takatomo Ezura

★ 0-026  A feasibility study for analyzing abnormal motion using relative cross correlation in tracking moving tumors in radiation therapy  
The Univ. of Tokyo  
Ritu Bhusal Chhatkuli

★ 0-027  Investigation of the correlation in radiomics features between EPID and digitally reconstructed radiography images  
Kyushu Univ.  
Mazen Soufi

April 13 (Thu.)  PACIFICO Yokohama Conference Center  419

6. Radiation Therapy (particle) 1 (Measurement)  
13:00-14:00  Moderator: Toshiyuki Toshito

0-028  Time-resolved analysis of Cherenkov light from positron emitter as a new probe to high-precision measurement of nuclear reaction cross section  
Waseda Univ.  
Takamitsu Masuda

0-029  Luminescence imaging of water during carbon-ion irradiation  
Nagoya Univ.  
Seiichi Yamamoto

0-030  Relationship between Luminescence Images and Dose Distributions in Water for Therapeutic Proton Beam  
Nagoya Univ.  
Takuya Yabe

0-031  Development of a low-energy X-ray camera for beam monitoring of particle therapy  
Nagoya Univ.  
Kouki Ando

0-032  Measurement of radiation quality of Pencil Carbon Ion Beams using a Silicon Detector  
Gunma Univ.  
Kohei Osaki

0-033  Proposal for dosimetry system using e⁺/e⁻ pair production events  
Chiba Univ.  
Shota Kimura
7. Radiation Therapy (particle) 2 (QA) 14:00–14:40 Moderator: Hideyuki Mizuno

- 0-034: Commissioning of the small-field and large-field proton beams in line scanning therapy for the Eclipse Proton treatment planning system
  - Aizawa Hosp. Yuya Sugama

- 0-035: Development of an online proton dose distribution monitoring system by using a fluorescent screen (I)
  - The Wakasa Wan Energy Research Center Fuyumi Ito

- 0-036: Testing a ZnS:Ag scintillator as a QA tool for small-field carbon ion therapy
  - Kitasato Univ. Takumi Narusawa

- 0-037: Time saving lateral profile validation procedure utilizing simplified Monte Carlo calculation for patient specific QA of proton beam therapy
  - Hitachi Ltd. Takahiro Yamada

8. Nuclear Medicine 1 14:50–15:50 Moderator: Masayori Ishikawa

- ★ 0-038: Whole gamma imaging concept: feasibility study of triple-gamma imaging
  - QST/NIRS Taiga Yamaya

- 0-039: Whole gamma imaging concept: Compton-PET imaging simulation for positron emitters
  - Chiba Univ. Yusuke Okumura

- 0-040: Development of whole-body PET system with 3 mm resolution and 1M
  - Chiba Univ. Kento Fujihara

- 0-041: Development of gamma-detectors for PET with position resolution of 0.5mm
  - Chiba Univ. Yusaku Emoto

- 0-042: Development of a circular shape Si-PM-based detector ring for positron emission mammography (PEM) system
  - Nagoya Univ. Kouhei Nakanishi

- 0-043: Development of second add-on PET/MRI prototype: Evaluation of PET imaging performance
  - QST/NIRS Fumihiko Nishikido


- 0-044: Development of a head motion tracking system for the helmet PET
  - QST/NIRS Yuma Iwao

- 0-045: Development of Monte Carlo Simulation Built-in Quantitative Iterative Reconstruction
  - Kindai Univ. Hosp. Kenta Sakaguchi

- 0-046: Study on the cause of edge artifact in PSF-based image reconstruction and its mitigation by Map-EM method with L1 regularization
  - Tokyo Metropolitan Univ. Hiroyuki Shinohara

- ★ 0-047: Joint estimation of activity and attenuation for a compact brain TOF-PET system: a simulation study
  - Tokyo Institute of Technology Risako Tanaka

- ★ 0-048: Separation of two radionuclides in small animal SPECT system
  - Hosei Univ. Shunsuke Shimodaira

- ★ 0-049: Multi-pinhole imaging with a triple head SPECT system
  - Hosei Univ. Hayao Kubota

10. Nuclear Medicine 3 17:00–18:10 Moderator: Tomoyuki Hasegawa

- ★ 0-050: Development of a four-layered DOI-PET detector with quadrisected crystals on the top layer
  - Chiba Univ. Genki Hirumi
** O-051 Development of an isotropic DOI detector based on two-sided photon readout  
QST/NIRS  Akram Mohammadi

** O-052 Comparison of yttrium-90 Compton image, SPECT, and PET  
Gunma Univ.  Makoto Sakai

** O-053 Simulation study on parallel plane PET based positron marker tracking with a volume of response algorithm  
Hokkaido Univ.  Ryo Ogawara

** O-054 Development of a small prototype system toward real-time OpenPET image-guided surgery  
QST/NIRS  Hideaki Tashima

** O-055 CALCULATING ABSORBED DOSE IN THYROID DISEASE TREATMENT BY I-131, USING OLINDA/EXM.  
Nguyen Huu Huan high school  Nguyen Thi Phuong Thao

** O-056 USING CARIMAS TO DETERMINE THE DISTRIBUTION OF RADIATION ACTIVITY IN PATIENTS FROM PET IMAGES  
Nguyen Huu Huan high school  Nguyen Thi Phuong Thao

April 14 (Fri.)  PACIFICo Yokohama Conference Center  418

11. Radiation Therapy (photon/electron) 5 (Treatment Planning and QA 1)  
9:10–10:10  Moderator: Takeshi Kamomae

** 0-057 VMAT QA using MapCHECK2 and original phantom  
Tatebayashi Kosei Hosp.  Ayaka Shinohara

** 0-058 Evaluation of MLC error sensitivity for VMAT QA: a comparison of various QA devices and metrics  
The Univ. of Yamanashi  Masahide Saito

** 0-059 Study of the difference in inhomogeneity correction of the treatment planning system and the gantry-mounted 3-dimensional detector  
Seirei Hamamatsu General Hosp.  Yumiko Adachi

** 0-060 Design and Development of a new Clarkson method that accounts for lateral scatter in inhomogeneous media  
Komazawa Univ.  Shunta Jinno

** 0-061 Optimal Control Point for Practical Dose Calculation with AXB Algorithm in Lung Stereotactic Body Radiation Therapy  
Chulalongkorn Univ.  Lukkana Apiyanasopon

** 0-062 Acceleration of the photon transport simulation by voxel-based Boltzmann transport calculation method using parallel computing  
Tokyo Metropolitan Univ.  Takahito Chiba

12. Radiation Therapy (photon/electron) 6 (Treatment Planning and QA 2)  
10:20–11:20  Moderator: Satoru Sugimoto

** 0-063 Computer-assisted treatment planning approach with genetic algorithm-based optimization using similar cases for lung stereotactic body radiation therapy  
Univ. of Kyushu.  Shu Haseai

0-064 Assessment of adaptive radiation therapy with deformable image registration software  
Kobe Univ.  Naritoshi Mukumoto

0-065 Investigation to improve dose distribution by adjusting the beam parameters based on the dose calculation during a course of radiotherapy  
Tohoku Univ.  Suguru Dobashi
0-066 The automated contouring framework of clinical target volumes based on the Bayesian inference for a prostate cancer radiation therapy
Univ. of Kyushu. Kenta Ninomiya

0-067 A concept for evaluation of time-variable dose-volume evaluating on the time-dose-volume manifold
Osaka Univ. Yusuke Anetai

0-068 Evaluation of oxygen enhancement ratio (OER) derived from cell survival curves
Hokkaido Univ. Ryota Yamada

13. Radiation Therapy (photon/electron) 7 (QA 1) 14:40–15:40 Moderator: Keisuke Usui

0-069 Assessment of delivery accuracy of Dynamic WaveArc technique using dose reconstruction method
Kyoto Univ. Hideaki Hirashima

0-070 The shift of the effective point of measurement and displacement perturbation factor at cylindrical chambers in high energy Photon beams
Gono Bishwabi dalay (Univ.) Paul Kumaresh Chandra

0-071 A source model for Monte Carlo dose calculation with the multi-point scattered model
Tohoku Univ. Yoshiki Ishizawa

0-072 Comparison of measured Synergy and Infinity linear accelerators: multi-institutional study
Suita Tokushukai Hospital Yuichi Akino

0-073 Consideration on the control of output dose in radiation therapy equipment
Iwate prefectural Isawa Hosp. Koji Ishita

0-074 The analysis of multi-institutional beam data of Clinac iX & Novalis Tx linear accelerators
OMCC Masaru Isono

14. Radiation Therapy (photon/electron) 8 (QA 2) 15:50–16:50 Moderator: Yu Kumazaki

0-075 Comparison of machine log-file and machine log-file with EPID image dose reconstruction methods using two commercial software programs
Tohoku Univ. Yoshio Kon

0-076 Improvement of dose analysis method using dose gradient information
Hokkaido Univ. Masayori Ishikawa

0-077 Fundamental study on pass rate change induced by various resolutions for film-based dose distribution analysis
Hokkaido Univ. Isshi Nara

0-078 Performance evaluation of TLD sheet toward the dosimetry in the build-up region
Hiroshima Univ. Tatsuhiko Suzuki

0-079 Testing plastic scintillator disk for verification of the electron boost plan in breast cancer patients
Kitasato Univ. Yuya Tatsuno

0-080 Measurement of an energy spectrum of linear accelerator using UVC camera
Tokyo Metropolitan Univ Kyohei Morita

April 14 (Fri.) PACIFICO Yokohama Conference Center 419

15. Diagnostic Imaging 1 (X-Ray/CT 1) 9:10–10:00 Moderator: Shinji Abe

0-081 Imaging properties of the digital mammography using pixelated-scintillator
Osaka Univ. Masao Matsumoto

0-082 Simulation study for effective reduction procedure of scattered X-rays toward high accuracy material identification based on photon counting technique
Tokushima Univ. Takashi Asahara
16. Diagnostic Imaging 2 (X-Ray/CT 2) 10:00–10:50  Moderator: Shinichi Wada

- **0-083** Investigation of 940nm near-infrared-ray computed tomography scanner  
  Iwate Medical Univ. Hosp.  Yuichi Sato

- **0-084** Novel photon-counting low-dose computed tomography using a multi-pixel photon counter (2)  
  Waseda Univ.  Tsubasa Oshima

- **0-085** Measurement of X-ray spectra using an LSO-small-photomultiplier detector and its application to quad-energy computed tomography  
  Iwate Medical Univ.  Satoshi Yamaguchi

**16. Diagnostic Imaging 2 (X-Ray/CT 2) 10:00–10:50**

Moderator: Shinichi Wada

16. Diagnostic Imaging 2 (X-Ray/CT 2) 10:00–10:50  Moderator: Shinichi Wada

- **0-086** Characteristics of a high-spatial-resolution dual cadmium-telluride-array detector and X-ray imaging  
  Iwate Medical Univ.  Eiichi Sato

- **0-087** Image-quality improvement of quad-energy X-ray computed tomography using a readily available cadmium telluride detector  
  Iwate Medical Univ.  Yasuyuki Oda

- **0-088** Effect of the number of MDCT scanning detector rows on image quality  
  Ryukyu Univ.  Takahiro Fujimoto

- **0-089** Usefulness of Combined Interpolation Method for Metal Artifact Reduction in Head and Neck Computed Tomography  
  Miyagi Cancer Center  Akira Ito

- **0-090** Image quality of virtual monochromatic imaging in dual-energy CT for detection of acute ischemic stroke  
  Kitasato Univ.  Hidetake Hara

17. Radiation Protection 11:00–11:50  Moderator: Hiroki Ohtani

- **0-091** The protective effect of amino acids against plasmid DNA damage induced by X-ray irradiation  
  Kitasato Univ.  Kouhei Kamada

- **0-092** Study of generalization of X-ray CT sources for Monte Carlo calculation.  
  QST/NIRS  Yusuke Koba

- **0-093** Search for Reasons of Incidence of Lung Cancers by Measurement of Environmental Radiation based on Cherenkov Detection  
  Chiba Univ.  Hiroshi Ito

- **0-094** Medical physicist's challenges in Nepal in absence of rules and regulations  
  Bir Hosp.  Adhikari Kanchan P.

- **0-095** A space engineering application of therapeutic broad proton beam for a cosmic ray simulation  
  WERC  Kyo Kume

18. Radiation Therapy (particle) 3 (Positioning) 14:40–15:30  Moderator: Taeko Matsuura

- **0-096** Comparison between current and advanced technique in image guidance for proton beam therapy in lung  
  Univ. of Tsukuba  Shunsuke Moriya

- **0-097** The positioning precision of In-room CT image-guided system in proton therapy facility and the first application to prostate cancer treatment.  
  Fukui Prefectural Hosp.  Yoshikazu Maeda

- **0-098** Predicting Interfractional Motion in Carbon Ion Radiation Therapy from CBCT-Based Bayesian Statistics  
  Gunma Univ.  Daniel S. Bridges

- **0-099** Analysis software to evaluate deviation of water-equivalent thickness along proton beam path between Plan CT and CBCT for proton therapy  
  Hokkaido Univ.  Takaaki Fujii
Development of a Carbon-Knife system: Patient positioning and fixation system

19. Radiation Therapy (particle) 4 (Treatment Planning)
15:40-16:30 Moderator: Yoshikazu Maeda

0-101 Calculation of water equivalent ratio of metal materials in patient body in carbon ion radiotherapy

SAGA HIMAT Genyu Kakiuchi

0-102 Revision of calibration method for CT-number to stopping-power ratio conversion in treatment planning of particle radiotherapy

QST/NIRS Nobuyuki Kanematsu

0-103 Beam angle optimization incorporating anatomical heterogeneities for pencil beam scanning charged-particle therapy in head and neck cancer

Tokyo Women’s Med. Univ. Chie Toramatsu

0-104 Geometrical low-dose-gradient junctioning technique for spot scanning proton beam therapy

Nagoya Proton Therapy Center Toshiyuki Toshito

0-105 A dosimetric evaluation method with setup, range and radiosensitivity uncertainties in fractionated carbon-ion therapy

QST/NIRS Makoto Sakama

April 15 (Sat.) PACIFICO Yokohama Conference Center 418

20. Radiation Therapy (particle) 5 (BNCT, Other) 9:10-10:00 Moderator: Shunsuke Yonai

0-106 Development of remote-changeable Bonner-sphere spectrometer for characteristic estimation in neutron irradiation field for BNCT

KURRI Yoshinori Sakurai

0-107 Dosimetric impact due to intratreatment positioning error in boron neutron capture therapy for the high-grade glioma

STBRC Takahiro Kato

0-108 Development of a new production method for patient immobilization implement by combination with 3D Printing technique for BNCT

Univ. of Tsukuba Hiroaki Kumada

0-109 An Approach for BNCT to be a General Radiation Therapy

K2BNCT Science & Engineering Laboratory Tooru Kobayashi

0-110 An application of microdosimetric kinetic model to targeted radionuclide therapy

Gunma Univ. Yoshiyuki Hirano

21. Radiation Therapy (photon/electron) 9 (CBCT and SBRT)
10:00-11:00 Moderator: Akihiro Haga

0-111 Feasibility study on a new approach to make CT to electron density conversion table for CBCT-based dose calculation

Keiyukai Sapporo Hosp. Yuta Kobayashi

0-112 Image quality improvement in cone-beam CT using super-resolution technique

Teikyo Univ. Asuka Oyama

0-113 Estimating target position from orthogonal cone-beam CT projections by dual-source kV X-ray imaging system with extracorporeal infrared marker

Kyoto Univ. Hiraku Irimina
0-114 Improving the imaging of thoracic tumors using four-dimensional cone-beam CT with combined shared projection data  
Juntendo Univ. Keisuke Usui

★ 0-115 Computational analysis of rectum translation variability in prostate cancer radiation therapy  
KyuShu Univ. Mohammad Haekal

★ 0-116 Process of stereotactic body radiation therapy for liver cancer at hue central hospital.  
Hue Central Hosp. Le Trong Hung

22. Medical Physics Education 11:00-11:20  
Moderator: Hiraku Fuse

★ 0-117 Medical Physics in Bangladesh: Education and Profession  
Ahsania Mission Cancer and General Hospital Md Akhtaruzzaman

0-118 Educational outcomes of a medical physicist program in Japan for past ten years with ‘Ganpro’  
Tohoku Univ. Noriyuki Kadoya

23. Magnetic Resonance 1 (Function and Device) 15:10-15:40  
Moderator: Toru Yamamoto

★ 0-119 Reproducibility of the Asymptotic Analysis in Intravoxel Incoherent Motion MRI  
Kyoto Univ. Yenpeng Liao

★ 0-120 Arteriolar vasomotor function obtained from spectral analysis of MR signal fluctuation in human brain: deterioration by normal aging  
Hokkaido Univ. Minghui Tang

0-121 Development of small-sized dielectric pads for improved RF field homogeneity in MR imaging of the brain at 7T  
NICT Takashi Ueguchi

24. Magnetic Resonance 2 (Compressed Sensing) 15:40-16:10  
Moderator: Seiji Kumazawa

0-123 Study on the quantitative accuracy of three-dimensional brain MRI using compressed sensing  
Tokyo Metropolitan Univ. Hiroyuki Shinohara

★ 0-124 Optimization of random sampling for compressed sensing MRI  
Kyorin Univ. Ryutaro Kawamura

★ 0-125 The development of the random sampling method using the Hermitian symmetry for compressed sensing MRI  
Kyorin Univ. Takeyuki Hashimoto

25. Magnetic Resonance 3 (Contrast) 16:20-17:00  
Moderator: Masahiro Umeda

0-126 Enhancement of the transverse relaxation time shortening effect by oxygen molecules in viscous solution with cellular diffusivity  
Hokkaido Univ. Masayuki Taguchi

0-127 Gadolinium contrast agent enhances longitudinal relaxation rate strongly in solution with intracellular viscosity  
Teine Keijinkai Hosp. Ken Masuyama

0-128 Cancerous-region enhancement utilizing gadolinium-oxide nanoparticles and 7.0-T magnetic resonance imaging  
Iwate Medical Univ. Eiichi Sato

0-129 Development of a text-data based learning tool simulating the contrast of MR image  
Tokyo Metropolitan Univ. Hiroyuki Shinohara
## April 16 (Sun.)  PACIFICO Yokohama Conference Center  418

### 26. Brachytherapy  9:10-10:10  Moderator: Takashi Hanada

<table>
<thead>
<tr>
<th>Paper No.</th>
<th>Title</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-130</td>
<td>Development of an independent verification method using DICOM RT Plan in gynecology brachytherapy</td>
<td>Chiba Unv. Yoshinobu Furuyama</td>
</tr>
<tr>
<td>O-131</td>
<td>Novel dosimetric measurement using RGD for HDR Brachytherapy with 3D printed deformable female pelvis phantom</td>
<td>Tohoku Unv. Kota Abe</td>
</tr>
<tr>
<td>O-132</td>
<td>Development and principle verification for the total three-dimensional end-to-end evaluation system in brachytherapy</td>
<td>Tokai Hosp. Tomoko Kikuchi</td>
</tr>
<tr>
<td>★ O-133</td>
<td>A simple method for verification of HDR brachytherapy source position inside applicators using an electron beam from a linear accelerator</td>
<td>Ryukyus Unv. Yasumasa Kakinohana</td>
</tr>
<tr>
<td>★ O-134</td>
<td>Monte Carlo simulations analysis of dosimetric impacts of titanium applicator and tissue inhomogeneity for cervical intracavitory brachytherapy</td>
<td>Kyushu Unv. Tran Thi Thao Nguyen</td>
</tr>
<tr>
<td>★ O-164</td>
<td>External beam radiotherapy and high dose rate brachytherapy treatment for carcinoma cervix in cancer hospital B.P.Koirala memorial cancer Hosp. Chaurasia Pradumna Prasad</td>
<td></td>
</tr>
</tbody>
</table>

### 27. Radiation Measurement 1 (Neutron)  10:10-10:50  Moderator: Yuzu Kutsutani-Nakamura

<table>
<thead>
<tr>
<th>Paper No.</th>
<th>Title</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>★ O-135</td>
<td>A comparison of generating properties of $^{125}$I and $^{134m}$Cs in a self-activated CsI scintillator for different energy neutron fields</td>
<td>Univ. of Kyushu Ryo Kakino</td>
</tr>
<tr>
<td>O-136</td>
<td>Fundamental study of a simple neutron-distribution measurement method by the self-activation of CsI plates using a CCD camera</td>
<td>Univ. of Kyushu Masaaki Tokunaga</td>
</tr>
<tr>
<td>O-137</td>
<td>A design study of a handy neutron spectrometer for BNCT QA procedures</td>
<td>Univ. of Kyushu Ryoosuke Kurihara</td>
</tr>
<tr>
<td>O-138</td>
<td>Optical photon transport simulation with GEANT4 for the paired SOF detector improvement</td>
<td>Hokkaido Unv. Yuki Murayama</td>
</tr>
</tbody>
</table>

### 28. Radiation Measurement 2 (Solidstate Detector)  13:00-13:50  Moderator: Kyo Kume

<table>
<thead>
<tr>
<th>Paper No.</th>
<th>Title</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-139</td>
<td>Development of a compact dosimeter using a silicon X-ray diode and a long USB cable</td>
<td>Iwate Medical Unv. Michiaki Sagae</td>
</tr>
<tr>
<td>★ O-140</td>
<td>Development of a semiconductor dosimeter for radiation therapy using a microminiature substrate</td>
<td>Iwate Medical Unv. Satoshi Yamaguchi</td>
</tr>
<tr>
<td>★ O-141</td>
<td>Evaluation of two-dimensional dosimetry using Al$_2$O$_3$, thermoluminescence slabs for robotic radiosurgery</td>
<td>Tokyo Metropolitan Unv. Shin Yanagisawa</td>
</tr>
<tr>
<td>★ O-142</td>
<td>Feasibility study of CBCT dose measurements with tissue-equivalent thermoluminescence sheet</td>
<td>Juntendo Unv. Chie Karokawa</td>
</tr>
<tr>
<td>O-143</td>
<td>A sensitivity calibration of radiophotoluminescent glass dosimeter for scattered therapeutic x-ray in water equivalent phantom</td>
<td>Nagoya Unv. Shouichi Yokose</td>
</tr>
</tbody>
</table>
29. Radiation Measurement 3 (Ion Chamber and Dosimetry)  
14:00-15:00  
Moderator: Toru Kawachi

0-144 Characteristics of liquid ionization chamber for photon and electron beams  
Univ. of Tsukuba Hosp.  
Hideyuki Takei

0-145 Humidity effect of a free air type ionization chamber  
Komazawa Univ.  
Yuuki Sato

0-146 Study of uncertainty in positioning ionization chamber at reference depth for various water phantoms  
Fukui Univ. Hosp.  
Naoki Kinoshita

0-147 Kilovoltage x-ray beam dosimetry using a 0.6 cc ionization chamber with a $N_{eq}$  
The National Cancer Center  
Yukihiro Uchida

0-148 New dosimetry based on $^{60}$Co absorbed dose-to-water calibration in diagnostic x-ray beams  
Kumamoto Univ.  
Suzuna Umeno

0-149 An Ion chamber calibration by the ionization current measurement in a high-energy photon beam from a clinical linac  
Komazawa Univ.  
Ken Hirayama

April 16 (Sun.)  PACIFICO Yokohama Conference Center  419

30. Radiation Therapy (particle) 6 (Biological Dose)  9:10-10:00  
Moderator: Makoto Sakama

★ 0-150 The effect of the oxygen enhancement ratio on clinical dose in carbon ion radiotherapy  
Gunma Univ.  
Athena Paz

★ 0-151 An estimation of cell survival using microdosimetric kinetic model and CR-39 in carbon ion irradiation  
Gunma Univ.  
Yoshiyuki Hirano

0-152 Skin damage caused by single doses of carbon ions  
Gunma Univ.  
Maika Yamaguchi

0-153 Biological washout effect of positron emitter after Carbon ion treatment  
Gunma Univ. Hosp.  
Takayoshi Ishii

★ 0-154 The protective effect of various amino acids on plasmid DNA damage induced by carbon ion irradiation  
Kitasato Univ.  
Katsunori Yogo

31. Radiation Therapy (particle) 7 (Irradiation Technique)  
10:00-10:40  
Moderator: Yoshikazu Tsunashima

0-155 Present status of full energy scanning for carbon-ion therapy at the NIRS-HIMAC  
QST/NIRS  
Yousuke Hara

★ 0-156 Development of a new ridge filter with honeycomb geometry for a pencil beam scanning system in particle radiotherapy  
QST/NIRS  
Ryohei Tansho

★ 0-157 Multiple Scattering Effect on Carbon CT Image.  
Gunma Univ.  
Sung Hyun Lee

★ 0-158 Charged particle computed tomography using different particles  
QST/NIRS  
Cécile Bopp
32. Radiation Therapy (particle) 8 (Respiratory Motion)  
13:00–13:50  
Moderator: Mutsumi Tashiro

0-159  Commissioning of Eclipse Treatment Planning System for Spot-scanning Nozzle in Hokkaido University Proton Therapy Center  
Hokkaido Univ. Hosp.  
Takaaki Yoshimura

★ 0-160  The retrospective interplay effect evaluation for real-time image-gated proton therapy using the fiducial marker motion and treatment machine log  
Hokkaido Univ.  
Shusuke Hirayama

0-161  Impact of 4D-CT ventilation imaging-based functional treatment planning for proton-SBRT  
Tohoku Univ.  
Yoshiro Ieko

0-162  Markerless tumor tracking by classification of deep machine learning  
Univ. of Tsukuba  
Toshiyuki Terunuma

0-163  A real-time single-shot energy subtraction image filter for markerless tumor tracking in radiotherapy  
QST/NIRS  
Shinichiro Mori