

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

Oral

April 10 (Thu.) 502

Radiation Measurement: Radiotherapy

10:30~11:10 Chairperson Hayato Tsuno (Gunma Prefectural College of Health Sciences)
Satoru Utsunomiya (Niigata University)

- TPI-001 Development of remote-operating neutron spectrometer for QA in BNCT irradiation field
Kyoto University Jakkrit Prateepkaew
- TPI-002 Microscintillator for dosimetry of proton microbeam
Nagoya University Katsunori Yogo
- TPI-003 Evaluation of maximum measurable dose rate of a plastic scintillator detector for FLASH carbon ion beam dosimetry
Hiroshima High-Precision Radiotherapy Cancer Center Shuichi Ozawa
- TPI-004 Development and demonstration of a radiation-resistant dual-layer hybrid dose distribution detector utilizing Cherenkov and scintillator light
The University of Tokyo Hospital Takeshi Ohta

Radiation Measurement: Imaging

11:20~12:10 Chairperson Yohei Inaba (Tohoku University)
Takamitsu Masuda (QST)

- TPI-005 A novel algorithm for generating virtual high-contrast images based on X-ray attenuation analysis using an energy-resolving photon-counting detector
Kanazawa University Rina Nishigami
- TPI-006 Organ dose measurement for filament material-based head and neck coronal 3D-printed phantom with dosimetry and Monte Carlo code
Kyushu University Donghee Han
- TPI-007 Novel procedure to derive relationship between surface and internal doses taking into consideration X-ray incident direction during helical CT examinations
Yamaguchi University Hospital Kazuki Takegami
- TPI-008 Visualization of scattered radiation sources during X-ray CT examinations using a high-sensitivity CMOS camera
Kyushu University Toshioh Fujibuchi
- TPI-009 Generating parallel optical path in in-air readout optical computed tomography
Teikyo University Akito S Koganezawa

Image Informatics: Prediction

13:30~14:20 Chairperson Daisuke Yoshimaru (The Jikei University School of Medicine)
Hidemi Kamezawa (Teikyo University)

- TPI-010 Machine learning approaches for kidney diagnostics using SPECT imaging
University of Rajshahi, Bangladesh Alamgir Hossain
- TPI-011 Novel mathematical models for tumor growth trajectories in breast cancer patients during neoadjuvant chemotherapy
Kyushu University Kenta Takida
- TPI-012 Estimation of age using alveolar bone loss with integrating deep learning for identity recognition and biological aging analysis
Chonnam National University, Korea Shaohua Tang
- TPI-013 ResNet-based exposure index (EI) prediction model using chest radiographs: A single institution study
Dongseo University, Korea Hojin Kim
- TPI-014 Deep learning based automatic body weight estimation from postmortem computed tomography scout views
Busan Institute, National Forensic Service, Korea Jin-Haeng Heo

Image Informatics: Segmentation

14:30~15:40 Chairperson Keisuke Usui (Juntendo University)
Noriyuki Kadoya (Tohoku University)

- TPI-015 TAILOR-TS system: tailored tumor segmentation system with facility-specific semi-supervised learning
Hiroshima University Daisuke Kawahara

TPI-016	Automatic segmentation of large gross tumor volumes based on hierarchical vision transformer model for radiotherapy patients with stage III NSCLC	Kyushu University	Qijing Lin
TPI-017	Efficient deep learning segmentation model with small training dataset for three-dimensional automatic measurement of gross tumor volume diameters of lung cancer on planning CT images	Kyushu University	Yunhao Cui
TPI-018	Development of deep learning-based dental implant segmentation model and analysis of panoramic image preprocessing effects	Chonnam National University, Korea	Seungmin Kim
TPI-019	Development of a PCA-based post-processing algorithm for individual teeth segmentation in dental X-ray images	Chonnam National University, Korea	Jihyeong Ko
TPI-020	Automatic alveolar bone loss segmentation model on panoramic dental radiograph images	Chonnam National University, Korea	Sasi Sooksatra
TPI-021	Deep learning model for multi-class alveolar bone loss semantic segmentation on panoramic dental radiograph images	Chonnam National University, Korea	Sasi Sooksatra

Radiation Protection: CT

15:50~16:20 Chairperson Yuta Matsunaga (Nagoya Kyoritsu Hospital)
Kosuke Matsubara (Kanazawa University)

TPI-022	Evaluation of recognition and utilization level for national diagnostic reference levels	Daegu Health College, Korea	Jae Hoo Joo
TPI-023	Evaluation of effective dose on dental cone-beam CT using PC based Monte Carlo simulation	Daegu Health College, Korea	Oh Hyog Kwon
TPI-024	Monte Carlo simulation-based calculation of conversion factor for effective dose using Korean national computed tomography dose index registry	Dongseo University, Korea	Lia W. Izzati

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X-ray and Others

10:30~11:30 Chairperson Kuniyuki Hidaka (The University of Osaka Hospital)
Hiraku Kawamura (Gunma Prefectural College of Health Sciences)

TPI-025	Study on anode heel effect in digital radiography system	Hanseu University, Korea	Min Woo Lee
TPI-026	The effect of grid focus distance on chest posterior radiography using an automatic exposure control system	Samsung Medical Center, Korea	Young Cheol Joo
TPI-027	Hindfoot alignment view versus long axial radiographic view	Taipei Medical University-Shuang Ho Hospital, Taiwan	KeMing Hu
TPI-028	Cross calibration analysis of dual-energy X-ray absorptiometry on the same model bone densitometry system	Daegu Health College, Korea	Dong hyun Kim
TPI-029	Comparison of international standards for quality control in digital breast imaging systems: a focus on Korea, Japan, and the United States	Shingu College, Korea	Joonsu Hwang
TPI-030	Fundamental study on optimal contrast media concentration in CBCT after WEB implantation for cerebral aneurysm	Osaka Metropolitan University Hospital	Yusuke Torada

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Radiation Protection: Occupational Exposure

8:00~8:40 Chairperson Yusuke Koba (QST)
Jun'ichi Kotoku (Teikyo University)

TPI-031	Distribution measurement of spatial dose by position of medical staff in intervention procedure	Hanseu University, Korea	Junyoung Park
TPI-032	Development of radiation protection educational material by augmented reality during angiography with user's opinion	Kyushu University	Koki Noguchi
TPI-033	Real-time imaging of scattered radiation sources during X-ray fluoroscopy using a portable radiation visualization camera	Kyushu University	Mayu Sakai
TPI-034	Investigate the contribution of scattered radiation from each source at the operator's position using Monte Carlo simulation	Kyushu University	Mao Tabuchi

Radiomics

8:50~10:00 Chairperson Takehiro Shiinoki (Yamaguchi University)
Takahiro Nakamoto (Hokkaido University)

TPI-035	Improvement of normalization of MRI to estimate pathological grade of prostate cancer by local radiomics	Tohoku University	Shinichi Tanaka
TPI-036	Automated approach for the stratification of stroke patients based on radiomic features	University of Rajshahi, Bangladesh	Alamgir Hossain
TPI-037	Noninvasive detection of EGFR gene mutations using electron density images from dual-energy CT	University of Miyazaki Hospital	Ryohei Fujisaki
TPI-038	N-dimensional persistent homology for identification models of epidermal growth factor receptor mutation characterized on CT images of patients with non-small cell lung cancer	Kyushu University	Takumi Kodama
TPI-039	Evaluation of robustness of MR-based prediction models of epidermal growth factor receptor mutations in metastatic brain tumors using coefficient of variation	Kyushu University	Yuki Yamaguchi
TPI-040	Evaluation of conventional and PCA-based feature selection method of multi-omics prediction model for radiation pneumonitis in NSCLC Stage III patient	Tohoku University	Wynn Wingyi Lee
TPI-041	Interpretation of survival predictors by CT-based radiogenomics for serous ovarian cancer	Hiroshima University	Misato Kishi

Nuclear Medicine: Performance Evaluation

10:10~11:00 Chairperson Toshimune Ito (Teikyo University)
Chie Toramatsu (QST)

TPI-042	Facilitating CT dose reduction for patients undergoing serial SPECT/CT imaging during ^{177}Lu DOTATATE therapy	Kaohsiung Medical University, Taiwan	Ching-Ching Yang
TPI-043	Evaluation of PET image change according to CT attenuation map of various pitch conditions	Hanseo University, Korea	Junhyeok Heo
TPI-044	Impact of ^{89}Zr decay properties on image quality and quantitative accuracy in PET	QST	Go Akamatsu
TPI-045	Comparative evaluation of image indicators by PET/CT equipment	Shingu College, Korea	Choi JiYu
TPI-046	Performance evaluation of Mirai-PET: a high-resolution and large FOV small animal PET with TOF-DOI detection	QST	Taiyo Ishikawa

Particle Therapy

15:30~16:20 Chairperson Taku Inaniwa (QST)
Sinnosuke Matsumoto (Tokyo Metropolitan University)

TPI-047	Measurement method using acrylic phantom for quality assurance of BNCT procedure	Kyoto University	Nishiki Matsubayashi
TPI-048	Feasibility study of spot scanning by MeV electron beam convergence control using electromagnets	Tokyo Metropolitan University	Yuma Hayashi
TPI-049	Conceptual design of a static gantry system	Osaka University	Hang Zhao
TPI-050	Focal dose-averaged linear energy transfer boost for prostate carbon-ion radiotherapy: a planning study	QST	Bo Zhao
TPI-051	Dosimetry benefits of adaptive radiotherapy in carbon ion radiotherapy for locally advanced non-small cell lung cancer: a comparative analysis of tumor coverage and normal tissue protection	Gunma University	Zhuojun Ju

Particle Therapy: Biophysics

16:30~17:10 Chairperson Chang Weishan (Tokyo Metropolitan University)
Akihiko Matsumura (Gunma University Heavy Ion Medical Center)

TPI-052	The appropriateness of the linear-quadratic model in predicting hypofractionated radiotherapy dose response for photon and proton irradiation	Shandong First Medical University, China	Qi Liu
TPI-053	Relative biological effectiveness (RBE) study at different depths of proton spread-out Bragg peak	Cancer Hospital of Shandong First Medical University, China	Xiaoxin Zuo
TPI-054	Exploration of the role and mechanism of proton beams in radiotherapy-resistant cells	Shandong First Medical University, China	Anhang Zhang
TPI-055	Normal tissue complication probability model for acute oral mucositis in patients with head and neck cancer undergoing carbon ion radiation therapy: based on dosimetry, radiomics, and dosiomics	Gunma University	Xiangdi Meng

Novel Technology

17:20~18:00 Chairperson Kousaku Saotome (Ibaraki Prefectural University of Health Sciences)
Satoru Sugimoto (RIKEN)

- TPI-056 Blockchain enhanced particle radiotherapy: a cross-platform secure data sharing platform for particle radiotherapy scenario
Cancer Hospital of Shandong First Medical University, China Yupeng Zou Jian Zhu
- TPI-057 Patient setup guide using AR technology for radiation therapy Kyushu University Jinyue Wu
- TPI-058 Micro-CT assessment of Nostoc commune extract's biological effects on osteoporosis models
Tzu Chi University, Taiwan Nien C. Zhang
- TPI-059 Impact of long-term step trajectories on weight loss Teikyo University Kenshiro Taguchi

April 11 (Fri.) 419**Clinical Technique**

8:00~8:50 Chairperson Kei Fukuzawa (Toranomon Hospital)
Taiki Magome (Komazawa University)

- TPI-060 Discussion on the value of image fusion based on artificial intelligence West China Hospital, China Hanyu Li
- TPI-061 A review on alternatives for sedation in children's MRI: systematic approach
The First Affiliated Hospital, China Fangting Chen
- TPI-062 Characteristics of patients with allergy-like reactions to iodinated contrast media undergoing computed tomography at a super-tertiary care hospital
Srinagarind Hospital, Thailand Sirintra Nahorkham
- TPI-063 Innovative use of shared decision-making and patient decision aids to enhance treatment selection for chronic low back pain
Ministry of Health and Welfare Shuang-Ho Hospital, Taiwan Yi Chun Huang
- TPI-064 Evaluation of adverse reactions and trends in contrast agent use in CT imaging: a single-center data development study
Dong-A University Hospital, Korea Mingyu Kim

April 12 (Sat.) 502**MR: Analysis and Technique**

8:00~9:10 Chairperson Yasuo Takatsu (Fujita Health University)
Susumu Takano (Tokai University Hospital)

- TPI-065 Fast brain perfusion quantification using second-order motion-compensated diffusion imaging with phase-contrast
Kanazawa University Naoki Ohno
- TPI-066 Magnetic resonance imaging on metal artifacts a comparative study of 2D, 3D images Hanseo University, Korea Jungyeon Park
- TPI-067 Assessment of vascular endothelial injury in rat models of unilateral carotid artery injury using 4D-flow MRI
Osaka University Sei Yasuda
- TPI-068 Short-term changes in volumes, T_2 , and diffusion parameters of tumor and peritumoral edema after embolization in supratentorial meningioma
Kanazawa University Ling Li
- TPI-069 Development of diagnostic support software for intracerebral hemorrhage detection and elapsed time estimation using multi-sequence magnetic resonance images
Hiroshima North Medical Center Asa Citizens Hospital Masayoshi Mori
- TPI-070 Compare MRI cardiac scanning in China and Japan Wenzhou Medical University, China Fangting Chen
- TPI-071 Preventing abnormal safety events in MRI examinations using the HFMEA method Shuang-Ho Hospital, Taiwan H.H. Tsai

Radiation Protection: X-ray

9:20~10:20 Chairperson Takashi Ohba (Fukushima Medical University)
Toshioh Fujibuchi (Kyushu University)

- TPI-072 Evaluating organ-specific radiation doses in neonatal incubator X-ray procedures using Monte Carlo simulation
Hanseo University, Korea Eunhye Kim
- TPI-073 A study of the minimization of exposure conditions during AP and lateral imaging of the lumbar spine in a digital radiography system
Hanseo University, Korea Hyeon Jun Seo
- TPI-074 Effectiveness of radiation dose optimization on patient radiation dose obtained from traumatic carotid-cavernous fistula endovascular treatment.
Khon Kaen University, Thailand Woranan Kirsattayakul
- TPI-075 Assessment of radiation dose and factors influencing it in mammography: a single-center study
Khon Kaen University, Thailand Songnisa Rammasoot

- TPI-076 Evaluating the suitability of exposure index as a patient dose monitoring tool in portable abdominal radiography
Dongseo University, Korea Seongwon Jeon
- TPI-077 Comparison of doses for custom-made phantoms and acrylic phantoms with varying thicknesses in breast stereotactic biopsy
Samsung Medical Center, Korea Min Ji Hong

Photon Therapy: Irradiation Technology

13:10~14:00 Chairperson Satoko Saotome (Cancer Institute Hospital of JFCR)
Shuichi Ozawa (Hiroshima High-Precision Radiotherapy
Cancer Center)

- TPI-078 A study on the dose distribution of photoneutrons according to the patient's treatment direction in radiation therapy
Hanseo University, Korea Yejun Oh
- TPI-079 Comparative evaluation of organ dose and image quality in kilovoltage CBCT imaging systems on an O-ring linear accelerator
Chulalongkorn University, Thailand Kantida Jittrakool
- TPI-080 Target position estimation based on diaphragm motion using respiratory-phase-adjusted variable offset vectors for markerless tumor tracking radiotherapy
Kyoto University Yukine Shimizu
- TPI-081 Respiratory reproducibility evaluation of a surface motion phantom for SGRT
Tokyo Metropolitan University Takuma Ito
- TPI-082 Evaluation of optimal rigid body registration algorithms for portable body surface monitoring devices
Fujita Health University Yudai Matsugi

Photon Therapy: Biophysics

14:10~14:40 Chairperson Akihiro Takemura (Kanazawa University)
Hiroaki Akasaka (Kobe University)

- TPI-083 Radiotherapy resistance of Hsa_circ_0000337 and its encoded proteins in esophageal squamous carcinoma cells
Shandong First Medical University, China Anhang Zhang
- TPI-084 The radiotherapeutic technology proposal aimed at its optimization for hepatocellular carcinoma using biomarkers
Hirosaki University Haruto Tanaka
- TPI-085 Tumor-specific circRNA-derived antigen peptide identification for esophageal squamous cell carcinoma
Qilu Hospital, China Liyuan Fan

Brachytherapy and Others

14:50~15:20 Chairperson Hidenobu Tachibana (National Cancer Center Hospital
East)
Hiroyuki Okamoto (National Cancer Center Hospital)

- TPI-086 Calibration of high-dose rate brachytherapy source (iridium-192) using well-type ionization chamber and high-dose-rate remote afterloading brachytherapy machine
Bangabandhu Sheikh Mujib Medical University, Bangladesh Harun O. Roshid
- TPI-087 Verification and calculation of shielding for 50 kVp high-dose rate (HDR) electronic brachytherapy commissioned at Gonoshasthaya cancer hospital and research centre
Gonoshasthaya Cancer Hospital & Research Centre, Bangladesh Nikas K. Nath
- TPI-088 Development of an AI chatbot for radiotherapy using retrieval-augmented generation
Tohoku University Yoshiyuki Takahashi

Image Informatics: Generative AI

15:30~16:30 Chairperson Chisako Muramatsu (Shiga University)
Akihiro Haga (Tokushima University)

- TPI-089 Conditional diffusion model-based image transformation of MR sequences in MR-guided radiotherapy
Kyoto University Linna Zhang
- TPI-090 In-house automatic evaluation of artificial intelligence image reconstruction algorithms in CT
Tuen Mun Hospital, Hong Kong Kwan Wai Li
- TPI-091 Development of deep learning-based diaphragm suppression technique through in-silico approach
Kanazawa University Rie Tanaka
- TPI-092 Image quality enhancement of small FOV cone-beam CT by using a generative model
Hirosaki University Idzuru Yoshinaga
- TPI-093 Generation of lung nodule images from image findings using latent diffusion model
Meijo University Kaito Urata
- TPI-094 Multi-task scheme for image findings generation and classification in chest CT: a comparative study of image captioning models
Meijo University Maiko Nagao

Image Informatics: Detection

16:40~17:20 Chairperson Rie Tanaka (Kanazawa University)
Hidetaka Arimura (Kyushu University)

- TPI-095 Initial investigation of triple negative detection in breast MR images using a multi-slice multi-phase vision transformer
Meijo University Ayaka Kawai
- TPI-096 Preliminary study on an automated detection scheme for pediatric forearm fractures in X-ray images using Open CLIP
Meijo University Haruna Suzuki
- TPI-097 Evaluation of deep learning-based segmentation models for cerebral hemorrhage detection in postmortem computed tomography
Dongseo University, Korea Yeji Kim
- TPI-098 Classification of postmortem computed tomography images for cerebral hemorrhage detection using deep learning
Dongseo University, Korea Ingyeong Mun

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CT: Analysis and Others

8:00~9:00 Chairperson Takanori Masuda (Kawasaki university of medical welfare)
Shingo Ohira (Tokyo Metropolitan University)

- TPI-099 Radiation dose reduction accelerated with deep learning reconstruction for temporal bone regions in ultra-high-resolution CT imaging
Kyushu University Hospital Yuki Sakai
- TPI-100 CT channel by using 3D modeling phantom evaluation of the usefulness of the wide detector
Hanseu University, Korea Seung Gu Kim
- TPI-101 Comparison of commercially available statistical iterative CT reconstruction algorithms from different vendors for performance evaluation of low-contrast detectability in pediatric brain protocols: a phantom study
Tuen Mun Hospital, Hong Kong Kwan Wai Li
- TPI-102 Application of virtual monochromatic images in quantitative computed tomography to reduce the measurement error of bone mineral density: a phantom study
West China Hospital, China Jing Tang
- TPI-103 Prediction of CT tube service life based on tube filament
West China Hospital, China Hanyu Li
- TPI-104 Exploring radiographers' divergent approaches to infection prevention and control in CT: a think-aloud study
University of Sydney, Australia Yobelli Jimenez

CT: Technique and Clinical Application

9:10~10:00 Chairperson Shohei Kudomi (Yamaguchi University Hospital)
Akihiro Haga (Tokushima University)

- TPI-105 Feasibility of protocol optimization for CT coronary angiography using a commercial pulsating cardiac phantom
Tuen Mun Hospital, Hong Kong Kwan Wai Li
- TPI-106 Effective atomic number score in calcified plaque evaluation: approach using photon-counting CT
Okayama University Takashi Asahara
- TPI-107 The correlation between the Hounsfield unit and bone mineral density to predict osteoporosis in patients
Thammasat University, Thailand Dutsadee Suttho
- TPI-108 Differentiation of tumor budding grade of colon cancer using noise-optimized virtual monoenergetic image in dual-energy computed tomography
Sichuan Cancer Hospital & Institute, China Peng Zhou
- TPI-109 Differentiation of malignant grade of non-mucinous pulmonary adenocarcinomas in subsolid nodules using enhanced dual-energy computed tomography
The Sixth People's Hospital of Chengdu, China Xiaohua Zheng

Radiation Protection: Radiotherapy and Nuclear Medicine

10:10~10:40 Chairperson Kei Wagatsuma (Kitasato University)
Sinnosuke Matsumoto (Tokyo Metropolitan University)

- TPI-110 The absorption dose and secondary tumor risk induced by different imaging methods in image-guided radiotherapy
Linyi Traditional Chinese Medicine Hospital, China Qinghao Cui
- TPI-111 Study of calculating shielding wall thickness in Cyclotron room
Shingu College, Korea Huijeong An
- TPI-112 Comparative dosimetry study of PARaDIM with ICRP Publication 128: calculation of organ and effective doses from 18F-FDG radiopharmaceutical
Kyushu University Shupti Sarker

Nuclear Medicine: Simulation and Others

10:50~11:50 Chairperson Koichi Okuda (Hirosaki University)

Kenta Miwa (Fukushima Medical University)

- TPI-113 Cherenkov light imaging for lutetium oxodotreotide Nagoya University Ge Yutong
- TPI-114 Synergistic reconstruction method for PET and Compton imaging of whole gamma imaging QST Hideaki Tashima
- TPI-115 A one-ring prototype of hemispherical brain PET with novel TOF-DOI detectors QST Kurumi Narita
- TPI-116 Impact of threshold value for maximum standardized uptake value on pretreatment FDG-PET-based prediction models for recurrence in patients with lung cancer prior to SBRT Kyushu University Taishi Shiroma
- TPI-117 Considering stable and unstable breathing PET counts during the steady state method The Iwate Medical University Toshiaki Sasaki
- TPI-118 Utility of total-body PET in monitoring carbon ion therapy: demonstration in rat QST Chie Toramatsu

Photon Therapy: Dose Evaluation

13:10~13:50 Chairperson Kaoru Ono (Hiroshima Heiwa Clinic)

Ryo Morimoto (Chiba University Hospital)

- TPI-119 Determination of phantom materials for a CT/MRI-corresponding anthropomorphic multimodal male pelvic phantom for end-to-end test in MR-guided online ART Tokyo Metropolitan University Masato Nishitani
- TPI-120 Evaluation of biological equivalent dose-based treatment planning in head and neck region Fujita Health University Natsuki Adachi
- TPI-121 Robustness evaluation of using aperture shape controller in postmastectomy radiotherapy (PMRT) using VMAT Komazawa University Fumiki Ito
- TPI-122 Evaluation of the 3D convolutional neural network approach for automated VMAT plan creation in head and neck cancer patients Nagasaki University Hospital Takuya Nakamura

Proton Therapy

14:00~15:00 Chairperson Taeko Matsuura (Hokkaido University)

Toshiyuki Toshito (Nagoya City University)

- TPI-123 Stopping-power ratio evaluation for proton therapy planning based on dual-energy CT Shandong First Medical University, China Jinghao Duan
- TPI-124 Safety check and dose evaluation of a commercial dual-energy CT stopping-power ratio software for proton planning in the treatment planning system Shandong First Medical University, China Jinghao Duan
- TPI-125 Assessment of point dose and proton range in Monte Carlo vs. pencil beam algorithms for proton therapy treatment planning system Chulalongkorn University, Thailand Wiroon Monkongsubsin
- TPI-126 The effect of minimum monitor units (MMU) on the quality and delivery efficiency of proton therapy Shandong Tumor Hospital, China Yunyi Fan
- TPI-127 Optimization of light-ion quantum molecular dynamics model for nuclear fragmentation in proton therapy Tokushima University Kai Hashimoto
- TPI-128 Accuracy of patient-specific deep learning for markerless tumor tracking; some comprehensive tests using lung phantoms and radiochromic films University of Tsukuba Toshiyuki Terunuma