

SU-I-GPD-T-168

**Initial Experience of Per Fraction Software in a Community Setting**

A Gonzalez, University Hospitals Case Medical Center, Elyria, OH

- PerFRACTION Software from Sun Nuclear was installed to work in conjunction with an ELEKTA VERSA HD Linac.
- “The PerFRACTION software presents clear advantages when compared to typical devices used for patient specific QA... The software is run in web based environment, meaning it could be assessed from any computer. PerFRACTION also has the potential to be used during the actual treatment to account for patient anatomy changes or Linac malfunction.”

SU-H400-GePD-F7-6

**First Report of the Clinical Use of a Commercial Automated System for Daily Patient QA Using EPID Exit Images**

A Olch, et al., University of Southern California and Children’s Hospital of Los Angeles, Los Angeles, CA

- “Analysis of EPID images revealed that dosimetric variations were present in a clinically relevant percentage of treatments. The reasons for failure were identifiable approximately half the time. Daily collection of EPID images using an automated system is a practical and effective way of monitoring dose delivery accuracy during radiotherapy and can provide actionable information.”

WE-J-KDBRA1-4

**Extensive Analysis of a 3D Second Check System**

B Bismack, et al., Henry Ford Health System, Detroit, MI

SU-I-GPD-T-319

**Sensitivity Testing of Quality Assurance (QA) Tasks in Sun Nuclear Corporation (SNC) Machine - A Fully Automated TG-142 QA Solution**

G Martin, et al., The Clatterbridge Cancer Centre, Birkenhead, Wirral, UK

- “SNC Machine is able to detect changes in machine performance below TG-142 action levels.”
- [HEAR FROM THE AUTHOR](#)  
Monday, July 30, 9:35 am - Sun Nuclear Booth 433  
Tuesday, July 31, 12:15 pm - Sun Nuclear Lunch Symposium, 1st Floor, Room 104

SU-I-GPD-J-29

**TomoTherapy MVCT Quality Assurance Using the CatPhan Phantom**

S Sutlief, et al., Landauer Medical Physics, Goodyear, AZ

SU-I-GPD-T-172

**Patient Specific VMAT QA for SRS with PerFraction**

J Haywood, Mercy Health Partners, Allendale, MI

- “The PFF (Perpendicular Field-to-Field) method suggested by TG-218 works well for VMAT SRS plans using the PerFRACTION software. The trajectory log-based 3D patient dose calculations are an added benefit and alleviate the disadvantages of the PFF method indicated by TG-218.”
- [HEAR FROM THE AUTHOR](#)  
Tuesday, July 31, 9:35 am - Sun Nuclear Booth 433

SU-I-GPD-T-171

**Reducing Mean Heart Dose with OSMS Monitoring and PerFraction Verification**

J Haywood, Mercy Health Partners, Allendale, MI

- PerFRACTION used to validate breath-hold for DIBH cases.
- Breath-hold technique resulted in higher gamma passing rates than free breathing technique, indicating breath-hold to more reproducibly position the patient.
- Excellent clinical use case of PerFRACTION in-vivo exit dosimetry that log file-only solutions would not see.

SU-I-GPD-T-193

**Current Limitations and Emerging Solutions for Quality Assurance (QA) of Single-Isocenter VMAT Treatment of Multiple Brain Metastases (MBM)**

P Zygmanski, et al., Brigham & Women’s Hospital, Boston, MA



**HEAR FROM OUR CHIEF SCIENCE OFFICER**

Bill Simon joins a panel of industry experts for this event focused on stakeholder collaboration.

**Pursuit of Safe and Effective Imaging and Radiation Therapy/ Planning Products**

Monday, July 30, 4:30 PM  
Room 209

## HALCYON™ QA // Featuring use of IC PROFILER™, 1D SCANNER™

SU-GPD-P-421

### Acceptance and Verification of Halcyon Linear Accelerators Without the Need for 3D Water Scanning System

S Gao, et al., MD Anderson Cancer Ctr., Houston, TX

#### HEAR FROM THE AUTHOR

Tuesday, July 31, 12:15 pm - Sun Nuclear Lunch Symposium, 1st Floor, Room 104

SU-I-GPD-T-330

### A Simplified Commissioning Procedure for the Halcyon Linear Accelerator

S AM Lloyd, et al., UC San Diego, La Jolla, CA

## MR-BASED RADIOTHERAPY QA // Featuring use of ArcCHECK®-MR, IC PROFILER™-MR

SU-F-KDBRA2-1

### Beam Output Changes After Magnet Ramp Down in a 1.5 T Pre-Clinical MR-Linac

H Lee, et al., UT MD Anderson Cancer Center, Houston, TX

SU-L-KDBRB1-7

### Investigating the Clinical Utility of Gafchromic EBT3 Film Dosimetry in An MR-Guided Linac

I Xhaferllari, et al., Henry Ford Health System, Detroit, MI

## PLAN QUALITY ASSESSMENT // Featuring use of PlanIQ™

MO-GH-KDBRA2-3

### Radiation Knowledge: Educational and Quality Improvement Initiative in Radiation Medicine

A Nobeh, et al., Faisal Specialist Hospital and Research Center, Riyadh

SU-I-GPD-T-397

### Assessment of Pinnacle's ScoreCard for SBRT Treatment Plan Evaluations

C Esquivel, et al., Texas Oncology-San Antonio, San Antonio, TX

## DAILY QA // Featuring use of Daily QA™ 3

SU-I-GPD-T-323

### When a Good Monitor Chamber Goes Bad: Diagnosing Atmospheric Communication of a Sealed Monitor Chamber

T McCaw, et al., University of Wisconsin, Madison, WI

- "Daily output variations measured with two independent systems on a TrueBeam STx were found to highly correlate with atmospheric conditions during a period in which the monitor chamber was suspected to be communicating with the atmosphere. Additional measurements acquired during controlled temperature variation of the monitor chamber confirmed atmospheric communication of an originally sealed chamber."

## TRS483 CLINICAL IMPLEMENTATION // Featuring use of EDGE Detector™

MO-I345-GePD-F3-4

### Measurement of Output and Percent Depth Dose (PDD) for Small Stereotactic Radiosurgery (SRS) Cones Using Semiconductor and Microdiamond Detectors

E Lief, et al., VA Medical Center, Pelham, NY

- "The practical methods described can be used for commissioning an SRS system with small cones. New correction factors significantly improve agreement between different detectors."

WE-C1030-GePD-F7-5

### Stereotactic Detector Comparisons for Small Field Relative Dosimetry

G Johnson, et al., Northwest Medical Physics Center, Lynnwood, WA

SU-I-GPD-T-374

### End-To-End Testing of Linac-Based SRS Using Radiochromic Film & CIRS STEEV Phantom

R Ambrose, et al., South Nassau Communities Hospital, Oceanside, NY

WE-C1030-GePD-F7-6

### Variation of Detector Specific Output Correction Factors for Small Fields From Different Linacs/collimation Systems

E Gershkevitch, et al., North Estonia Regional Hospital, Tallinn

## MULTI-METS, IMRT & VMAT QA // Featuring use of ArcCHECK®

SU-I-GPD-T-375

### Quality Assurance Study of Stereotactic Radiosurgery of Multiple Brain Lesions with a Single Isocenter

J Zhang, et al., Southern California Permanente Medical Group, Los Angeles, California

SU-I-GPD-T-436

### Dosimetric Verification for Ultra-Small Intracranial Target Radiation Treatment Using Linac-Based Dynamic Conformal Arc Therapy

Y Zheng, et al., University Hospitals Cleveland Medical Center, Cleveland, OH

SU-I-GPD-T-413

### Validation of Single Isocenter Multi-Target SRS Planning Calculations and Early Clinical Experience

C Geraghty, et al., Anne Arundel Medical Center, Annapolis, MD

SU-I-GPD-T-200

### Investigating Causes to Unexplained Failures in IMRT QA

A Uejo, et al., Mayo Clinic Arizona, Phoenix, AZ

SU-I-GPD-T-199

### A Comparative Study of Head & Neck VMAT QA Using ArcCheck and MapPhan Diode Detector Array Systems

J Zhang, et al., Southern California Permanente Medical Group, Los Angeles, CA

## DIAGNOSTIC QA // Featuring use of Multi-Energy CT Phantom

TH-AB-202-4

### Convolutional Neural Network Based Material Decomposition with a Photon-Counting-Detector Computed Tomography System

H Gong, et al., Mayo Clinic, Rochester, MN



## PARTNERS IN SOLUTIONS

Sun Nuclear's Greg Robinson will present on PlanIQ™ in this session, *Intelligent Automation for Treatment Planning Workflows.*

## PlanIQ – Define, Analyze & Document Treatment Plan Quality

Monday, July 30, 1:50 PM  
Exhibit Hall D, Poster Area