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3rd European Congress of Medical Physics

Embracing Change, Sharing Knowledge



11° Congresso Nazionale AIFM

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16-19 June 2021

VIRTUAL EDITION

SCIENTIFIC PROGRAMME



ECMP 2020 welcomes



Sociedad Española
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Index

p. 3 Scientific Programme - Wednesday 16 June 2021

p. 4 Scientific Programme - Thursday 17 June 2021

p. 7 Scientific Programme - Friday 18 June 2021

p. 10 Scientific Programme - Saturday 19 June 2021

p. 13 Invited Talks on demand

p. 15 Oral Communication on demand

p. 23 Posters

p. 33 Satellite Symposia

p. 34 Supporters and Exhibitors

INDEX

Live Sessions

WEDNESDAY 16 JUNE 2021

Time table	LIVE ROOM • 2	LIVE ROOM • 1	LIVE ROOM • 3	LIVE ROOM • 4
9.00 17.00	<p>AIFM DAY 11° AIFM National Congress</p>	<p>Precongress EFOMP School (ESMPE) <i>Satellites in:</i> Artificial Intelligence*</p>	<p>Precongress EFOMP School (ESMPE) <i>Satellites in:</i> Nuclear Medicine Dosimetry*</p>	<p>Precongress EFOMP School (ESMPE) <i>Satellites in:</i> Patient Specific QA in Radiotherapy*</p>
Time table	LIVE ROOM • TORINO			
17.30	<p>Opening Ceremony of ECMP 2021</p>			

* This course is accredited by EBAMP as CPD event for Medical Physicists at EQF Level 8 and awarded 14 CPD credit points.

THURSDAY 17 JUNE 2021

Time table	LIVE ROOM • TORINO	LIVE ROOM • PIEMONTE
	RT	ECSK
8.00	<p style="text-align: center;">Refresher Course RT Radiotherapy. Small Field Dosimetry. Development and Challenges <i>Chair: Nuria Jornet [ES]</i></p> <p style="text-align: center;">New Developments and Detectors for Small Field Dosimetry. <i>Hugo Palmans [UK]</i></p> <p style="text-align: center;">Challenges and Opportunities of Small Field Dosimetry in Clinical Practice. <i>Paolo Francescon [IT]</i></p>	<p style="text-align: center;">Refresher Course ECSK Embracing Change, Sharing Knowledge <i>Chair: Leonard Wee [NL]</i></p> <p style="text-align: center;">Biological Basis for Occupational Dosimetry and Dose Limits. <i>Klaus Rüdiger Trott [DE]</i></p> <p style="text-align: center;">Small Field Dosimetry for QA of Stereotactic Radiotherapy. <i>Serenella Russo [IT]</i></p>
9.00	<p><i>Live Discussion & Coffee Break</i></p>	
9.30	<p style="text-align: center;">Scientific Session RT <i>Chair: Jens Edmund [DK]</i></p> <p style="text-align: center;">Keynote • Automated Treatment Planning. Potentials and Limitations. <i>Ben Heijmen [NL]</i></p> <p style="text-align: center;">Production and Dosimetric Characterization of a FLASH Electron Beam. <i>Eleonora Bortoli</i></p> <p style="text-align: center;">Radiation Enhancement for kV and MV X-ray Irradiation of Breast Cancer Cells Incubated with Gold Nanoparticles. <i>Alessia Tudda</i></p> <p style="text-align: center;">Validation of SNPs Associated with Late Severe Toxicity after Radiotherapy for Prostate Cancer. <i>Eliana Gioscio</i></p> <p style="text-align: center;">Combining Computed Tomography and Biologically Effective Dose Radiomics Improve Prediction of Tumor Response to Robotic Lung SBRT. <i>Michele Avanzo</i></p> <p style="text-align: center;">Training and Validation of a Robust PET Radiomic-based Index Predicting Distant-relapse-free-survival after Radio-chemotherapy of Patients with Locally Advanced Pancreatic Cancer. <i>Martina Mori</i></p>	<p style="text-align: center;">Scientific Session ECSK <i>Chair: Marco Brambilla [IT]</i></p> <p style="text-align: center;">Keynote • Monte Carlo in Imaging. <i>José M. Udías [ES]</i></p> <p style="text-align: center;">Machine Learning with Imbalanced Clinical Data. Does Synthetic Minority Oversampling Help? <i>Avishek Chatterjee</i></p> <p style="text-align: center;">A Machine-learning Radiomics Approach in Prostate Cancer Studies. <i>Giorgio Russo</i></p> <p style="text-align: center;">Diffusion-weighted MRI-based Textures as Imaging Biomarker for Early Evaluation of the Response to Therapy in Oropharyngeal Cancer. <i>Silvia Tommasin</i></p> <p style="text-align: center;">Computer-Aided Diagnosis of Masses in Breast CT Imaging. Combined Power of Handcrafted and Deep Learning Radiomics. <i>Marco Caballo</i></p> <p style="text-align: center;">Denoise and Segmentation of CT Images through CNNs. Performance and Post-processing Characterization. <i>Federico Valeri</i></p> <p style="text-align: center;">Characterization of Cadmium Telluride as Detector Material for Multispectral Imaging Devices. <i>Stefanie Kirschenmann</i></p>

THURSDAY 17 JUNE 2021

Time table	LIVE ROOM • TORINO	LIVE ROOM • PIEMONTE
	RT	ECSK
11.00	<i>Live Discussion & Coffee Break</i>	
11.30	<p>EANM Joint Session - Advances in PET Challenges of Integration between the Different Disciplines in Medical Physics Related to Hybrid Equipment <i>Chair: Dimitris Visvikis [FR]</i></p> <p>AI for PET. <i>Andrew Reader [UK]</i></p> <p>Large Axial Field of View PET. <i>Kuangyu Shi [CH]</i></p> <p>The Promise of Digital PET/CT. <i>Ian Armstrong [UK]</i></p>	<p>Joint Session EuSoMII Deep-Learning Applications in Mammography <i>Chair: Federica Zanca [IT]</i></p> <p>Technical Challenge. <i>Jonas Teuwen [NL]</i></p> <p>Clinical Implementation and Evaluation. <i>Sue Astley [UK]</i></p>
12.30	<i>Live Discussion</i>	
12.50	<i>Lunch Break and Satellite Symposia [see page 33]</i>	
14.00	<p>ECMP Welcomes Spain. Brachytherapy <i>Chair: José Pérez-Calatayud [ES]</i></p> <p>In-vivo Dosimetry in Brachytherapy. <i>Antonio Herreros [ES]</i></p> <p>Skin Brachytherapy. <i>Victor González [ES]</i></p> <p>New Algorithms in Brachytherapy Dosimetry. <i>Facundo Ballester [ES]</i></p> <p>Cervix Brachytherapy. <i>José Pérez-Calatayud [ES]</i></p>	<p>Scientific Session ECSK <i>Chair: Mark Lubberink [SE]</i></p> <p>Keynote • Radiomics in Multimodality Imaging. <i>Dimitris Visvikis [FR]</i></p> <p>A Method for the Quantitative Discrimination of Breast Tissue Chemical Composition Based on the Spectral Decomposition of X Ray Tomographic Breast Images. <i>Stefan Vrbaski</i></p> <p>Improving Spinal Cord fMRI Using High Order and Slice-specific Linear Shimming. <i>Dimitra Tsvika</i></p> <p>SPR Stoichiometric Calibration of a Single Energy CT and Validation Using Fresh Tissue Samples. <i>Pedro Bora Aguilar Redondo</i></p> <p>Promises of Film Dosimetry Based on Radiophotoluminescence Imaging in Radiotherapy Including Charged Particle Beams. <i>Marijke De Saint-Hubert</i></p> <p>3D Diamond Detectors for Small Field Dosimetry. <i>Kheida Kanxeri</i></p>

THURSDAY 17 JUNE 2021

Time table	LIVE ROOM • TORINO	LIVE ROOM • PIEMONTE
	RT	ECSK
		<p>Modulation Complexity Metrics for Robotic MLC Plans. Predictors of Quality Assurance Results. <i>Laura Masi</i></p> <p>Texture Analysis in 177Lu SPECT Phantom Images to Assess the Uniformity Requirements. <i>Emilio Mezzenga</i></p>
15.30	<i>Live Discussion & Coffee Break</i>	
16.00	<p>Scientific Session RT <i>Chair: Brendan McClean [IE]</i></p> <p>Keynote • Innovative Techniques in Radiotherapy. <i>Yolanda Prezado [FR]</i></p> <p>Towards Real-time EPID-based 3D In-vivo Dosimetry Using Machine Learning. <i>Juliana Cristina Martins</i></p> <p>Patient Specific Evaluation of Breathing Motion Induced Interplay Effect. <i>Mohammad Varasteh Anvar</i></p> <p>CIED Malfunctions by Direct Exposure at Doses $\geq 2\text{Gy}$. a Prospective, Multi-centre, In-vitro Evaluation. <i>Maria Daniela Falco</i></p> <p>The Effect of Modern Radiotherapy Techniques Using Flattening Filter-free Beams (6 MV) on Cardiac Implantable Electronic Devices (CIEDs). <i>Giorgia Guerra</i></p> <p>Dosimetric Study of Fetal Dose during External Beam Radiotherapy Using OSLD. <i>Marta Paiusco</i></p> <p>Practical Strategies for Plan Complexity Reduction. <i>Alessandro Scaggion</i></p> <p>Establishing Ground Truth Training Data for Deep Learning in Radiotherapy. <i>Eva Ambroa Rey</i></p>	<p>Scientific Session ECSK <i>Chair: Jonas Andersson [SE]</i></p> <p>Keynote • Medical Device Integration with IT Networks. <i>Maurice Janssen [NL]</i></p> <p>X-ray Grating Interferometry Design for the 4D GRAPH-X System. <i>Alessandra Paterna</i></p> <p>Fabrication and Characterization of an Heterogeneous Phantom for Quantitative MRI. <i>Adriano Troia</i></p> <p>Effect of Dictionary Optimization on Relaxation Time Maps in Low Field MR Fingerprinting Applications. <i>Davide Cicolari</i></p> <p>Comparison of Machine Learning Classifiers to Predict Patient Survival and Genetics of GBM. Towards a Standardized Model for Clinical Implementation. <i>Antonio Napolitano</i></p> <p>Compliance Assessment of Different Radiomic Software Programs with Respect to the IBSI Standard. <i>Andrea Bettinelli</i></p> <p>Registration of Dynamic Computer Tomography Images for In-vivo Joint Kinematics. <i>Benyameen Keelson</i></p> <p>Assessment of Two Printing Technologies for the Manufacturing of Anthropomorphic Breast Models. Preliminary Results. <i>Tihomir Georgiev</i></p>
17.30	<i>Live Discussion</i>	
18.00	<p>Galileo Galilei Award <i>Chairs: Paddy Gilligan [IE] - Juliana Toma-Dasu [SE]</i> <i>Paolo Russo [IT]</i></p>	

FRIDAY 18 JUNE 2021

Time table	LIVE ROOM • TORINO	LIVE ROOM • PIEMONTE
	NM	RPD, BME, DIR
8.00	<p>Refresher Course NM Nuclear Medicine. Theranostics <i>Chair: Manuel Bardies [FR]</i></p> <p>State of the Art in Nuclear Medicine Theranostics. <i>Glenn Flux [UK]</i></p> <p>New Theranostic Isotopes. <i>Mark Konijnenberg [NL]</i></p>	<p>Special Focus Session RPD Radiation Protection and Dosimetry <i>Chair: Antonio Lallena [ES]</i></p> <p>Keynote • DRLs. The Good, The Bad and The Ugly. <i>Madan Rehani [USA]</i></p> <p>Results from EUCLID (European Study on Clinical DRLs). <i>John Damilakis [GR]</i></p>
9.00	<i>Live Discussion & Coffee Break</i>	
9.30	<p>Scientific Session NM <i>Chair: Stefaan Vandenberghe [BE]</i></p> <p>Keynote • The First Total Body PET Scanner (EXPLORER). <i>Terry Jones [USA]</i></p> <p>Evaluation of a Novel Data-driven Respiratory Gating Technique in PET/CT Exams. <i>Valeria Trojani</i></p> <p>Optimization of Myocardial Perfusion SPECT Dose in Dialysis Patients. <i>Laura Pagan</i></p> <p>A PET-based Radiomics Model of Brain Metastasis. <i>Giorgio Russo</i></p> <p>Radioembolization of Hepatocarcinoma with 90Y Glass Microspheres. Treatment Optimization Using the Dose-toxicity Relationship. <i>Carlo Chiesa</i></p> <p>The Potential Value and Pitfalls of Radiomics for Clinical Positron Emission Tomography (PET) in DLBCL. A Comparison between Two of Most Widely Used Segmentation Thresholds. <i>Federico Dalmaso</i></p> <p>Large Area SiPM Pixels for SPECT. A Cost-effective Approach to Build Compact Cameras. <i>Daniel Guberman</i></p> <p>Does Voxel Dosimetry Improve Clinical Outcome Prediction in Radioembolization Treatment? <i>Chiara Romanò</i></p>	<p>Scientific Session RPD, BME, DIR <i>Chair: Sonia NIELLES-VALLESPIN [UK]</i></p> <p>Keynote • Examples of Practical and Clinical Consequences after Implementing Dose Monitoring. <i>Elina Samara [CH]</i></p> <p>Surgeon Eye-lens Dose Monitoring in Interventional Procedures. A Multi-centre and Multi-procedure Survey. <i>Simone Busoni</i></p> <p>Review of Guidelines and Legislative Documents Regarding the Use of Patient Contact Out-of-field Shielding. <i>Marta Sans Merce</i></p> <p>Dosimetric and Radiation Cancer Risk Evaluation of High Resolution Thorax CT During COVID-19 Outbreak. <i>Caterina Ghetti</i></p> <p>Use of an MRI Scan Based 3D Printed Personalized Phantom to Assess Lens Dose Reduction Factors for Lead Glasses in Interventional Cardiology. <i>Bethany Mahady</i></p> <p>Reference Dosimetry Audits for Radiotherapy Beams in Italy. <i>Paola Martucci</i></p> <p>Irradiation of a Pregnant on Leksell Gamma Knife Icon/Perflexion. Radiobiological Risk Assessment and Three Clinical Cases. <i>Josef Novotny</i></p>
11.00	<i>Live Discussion & Coffee Break</i>	

FRIDAY 18 JUNE 2021

Time table	LIVE ROOM • TORINO	LIVE ROOM • PIEMONTE
	NM	RPD, BME, DIR
11.30	<p>Joint Session ESMRMB Quality Control in Hybrid MR Imaging <i>Chair: Ioannis Seimenis [GR]</i></p> <p>Challenges of Quality Assessment and Control in Hybrid Imaging. <i>Bernhard Sattler [DE]</i></p> <p>Quality control in the MR LINAC. <i>Andreas Wetscherek [UK]</i></p> <p>Quality Control in PET-MR. <i>Georg Schramm [BE]</i></p>	<p>Joint Session ESR Multiple Imaging Examinations <i>Chair: Annalisa Trianni [IT]</i></p> <p>Multiple Imaging Examinations. ESR and ISR Views. <i>Guy Frija [FR]</i></p> <p>Cumulative Radiation Dose from Medical Imaging. <i>Marco Brambilla [IT]</i></p> <p>Multiple Imaging Optimisation-Radiologist and Medical Physicist Point-of-view. <i>Boris Brkljačić [HU], Jenia Vassileva [AT]</i></p>
12.30	<i>Live Discussion</i>	
12.50	<i>Lunch Break and Satellite Symposia [see page 33]</i>	
14.00	<p>Scientific Session NM <i>Chair: Søren Holm [DK]</i></p> <p>Keynote • Dosimetry in Nuclear Medicine. <i>Manuel Bardies [FR]</i></p> <p>Clinical Practice Implementation of Personalized Dosimetry in Patients Treated with ¹⁷⁷Lu-DOTATATE. <i>Valentina Pirozzi Palmese</i></p> <p>Comparison of mRECIST Versus Densitometric Method for Radioembolization Treatment Response Evaluation in Hepato-cellular Carcinoma Patients. <i>Chiara Romanò</i></p> <p>Diagnostic Reference Levels in Nuclear Medicine Single Photon Emission Imaging in Croatia. <i>Dea Dundara Debeljuh</i></p> <p>Implementation of the New QUANUM 3.0 Tool as an Internal Audit Methodology in a Large General Hospital. <i>Luiza Mello</i></p> <p>Influence of Volumes, Scan Times and Radiotracer Distributions on PET Radiomics Features. A Phantom Study. <i>Lisa Milan</i></p>	<p>Scientific Session RPD, BME, DIR <i>Chair: Kirsten Bolstad [NO]</i></p> <p>Keynote • Clinical Applications of Spectral Imaging and Dynamic CT. <i>Nico Bols [BE]</i></p> <p>RadiomiK Phantom to Test the Robustness of CT Radiomic Features. <i>Stefania Pallotta</i></p> <p>Analysis of Rejected Radiological Images Across 5 Centres. <i>Elina Samara</i></p> <p>Verification of Threshold NPWE Detectability Indices with a Novel Statistical Alternative for Image Quality Assessment in Digital Mammography. <i>David Caldwell</i></p> <p>Assessment of Task-based Image Quality for Abdominal CT Protocols Linked with National Diagnostic Reference Levels. <i>Damien Racine</i></p> <p>Conversion of Dose Parameters between Cone-beam CT and Multi-slice CT. A Structured Review of the Current Literature. <i>Steffen Ketelhut</i></p>

FRIDAY 18 JUNE 2021

Time table	LIVE ROOM • TORINO	LIVE ROOM • PIEMONTE
	NM	RPD, BME, DIR
	<p>Clinical Impact on the Radiotherapy Treatment Planning of the New EARL FDG-PET/CT Accreditation Versus the Previous EARL1. <i>Elisa Jimenez-Ortega</i></p> <p>Longitudinal [18F]flortaucipir PET. Comparison of Quantitative and Semi-quantitative Parameters. <i>Hayel Tuncel</i></p>	<p>On Site-specific dose Trigger Levels in Case of High-dose Interventional Radiology Procedures Using Radiation Dose Monitoring Software. <i>Stefano Riga</i></p> <p>Validation of Probabilistic Fiber Tracking Method by Evoked Potential Recorded in Epileptic Patients. <i>Domenico Lizio</i></p>
15.30	<i>Live Discussion & Coffee Break</i>	
16.00	<p>Scientific Session NM <i>Chair: Bernhard Sattler (DE)</i></p> <p>Keynote • Quantitative SPECT. <i>Brian Hutton (UK)</i></p> <p>Dosimetric Evaluation of Receptor-heterogeneity on the Therapeutic Efficacy of Peptide Receptor Radionuclide Therapy. Correlation with DNA Damage Induction and In-vivo Survival. <i>Giulia Tamborino</i></p> <p>Neuroendocrine Tumor Therapy with 177Lu-DOTATATE. the Dosimetric Approach. <i>Anna Rienzo</i></p> <p>Targeted Alpha PSMA-based Therapy of Metastatic Castrate-resistant Prostate-cancer Patients (mCRPC). Prediction Dosimetry. <i>Maria Luisa Belli</i></p> <p>Quality Control in PET/CT and PET/MRI. Results of an EFOMP Survey Amongst Europe. <i>Gabriel Reynes-Llompant</i></p> <p>Impact of Cellularity and Heterogeneity on Deposited Absorbed Dose Patterns of Alpha and Beta Emitters in a Model of Tumoral Clusters. <i>Jonathan Tranel</i></p> <p>Qualitative and Quantitative Analysis of Y-90 Imaging of SPECT/CT and PET/CT Phantom Studies. <i>Agata Kubik</i></p> <p>Dosimetric Approach to 131I Remnant Ablation in Differentiated Thyroid Cancer. <i>Fatma Arzu Görtan</i></p>	<p>Scientific Session RPD, BME, DIR <i>Chair: Daniela Thorwarth (DE)</i></p> <p>Monte Carlo Unusual Applications. <i>Antonio Lallena (ES)</i></p> <p>A Monte Carlo Code for the Creation of Heterogeneous Breast Phantoms for Mammography. <i>Raffaele Maria Tucciariello</i></p> <p>Generation of Realistic Patient-specific SPECT Images with GATE Monte Carlo Simulation for 177Lu Dosimetry in Molecular Radiotherapy (MRT). <i>Gunjan Kayal</i></p> <p>Precise Dose Calculations in Nuclear Medicine Dosimetry Using a Graphical User Interface-based on GAMOS/GEANT4. <i>Pedro Arce</i></p> <p>Dosimetric Validation of a Monte Carlo Based Treatment Planning System for Pencil Beam Scanning Proton Therapy Treatments in Low Density Tissues. <i>Francesco Fracchiolla</i></p> <p>Monte Carlo Simulation and Experimental Assessment of Dose Measurements in Mammography using AGMS-DM+ and OSL NanoDot™ Detectors and Voxel Phantom. <i>Imane Fathi</i></p> <p>Monte Carlo Calculations of Dose in CT Examinations. Influence of Number of Tissues Included in the Voxel-based Patient's Model. <i>Witold Skrzyński</i></p>
17.25	<i>Live Discussion</i>	
17.45	<p>Medal award Jim Malone. Images and Reflections for Medical Physics. Ten Artworks to Challenge and Inspire. <i>Chair: Paddy Gilligan (IE)</i></p>	

SATURDAY 19 JUNE 2021

Time table	LIVE ROOM • TORINO	LIVE ROOM • PIEMONTE
	DIR	PROF, E&T
8.00	<p>Refresher Course DIR Diagnostic and Interventional Radiology. Artificial Intelligence in DIR <i>Chair: Nico Buls [BE]</i></p> <p>Practical Machine Learning for Clinical Scientists. <i>Teemu Makela [FI]</i></p> <p>Computational Medical Imaging and Machine Learning-methods, Infrastructure and Applications. <i>John Lee [BE]</i></p>	<p>Special Focus Session in Professional Matters Professional Matters <i>Chair: Adriaan Lammertsma [NL]</i></p> <p>How to facilitate networking? Initiating mentorships between new and experienced medical physicists. <i>Markus Buchgeister [DE]</i></p> <p>Retrospective Look Through 20 Years of Physica Medica - European Journal of Medical Physics. <i>Paolo Russo [IT]</i></p>
9.00	<i>Live Discussion & Coffee Break</i>	
9.30	<p>Scientific Session DIR , RPD <i>Chair: Maurice Janssen [NL]</i></p> <p>Keynote • Patient Specific Dosimetry in CT (AAPM-EFOMP TG-246). <i>Jonas Andersson [SE]</i></p> <p>The Importance of Evaluating the Effectiveness of Lead-free X-ray Protective Aprons for Worker Safety. <i>Adriana Taddeucci</i></p> <p>Preliminary Study on Dose Conversion Factors for Dental Cone Beam CT. <i>Joke Binst</i></p> <p>The Impact of Patient Off-centring on Organ-based Tube Current Modulation in Chest CT. A Phantom Study with MOSFET Dosimeters. <i>Touko Kaasalainen</i></p> <p>Radiation Risk for Multiple CT Examinations in a Large Multi-Specialist Hospital. a Potential Role of Total DLP from Body Series. <i>Osvaldo Rampado</i></p> <p>Comparison of Peak Skin Dose Assessment between RDIM Software and Radiochromic Film Measurements in Interventional Radiology and Cardiology Procedures. <i>Stefano Riga</i></p> <p>Multi-parameter Analysis for Dose and Noise Evaluation in Clinical Abdomen CT Examinations. <i>An Dedulle</i></p> <p>DRL and Cluster Analysis. The Case of Abdominal Region. <i>Pedro Luis Ordonez Valverde</i></p>	<p>Scientific Session PRO, E&T <i>Chair: J. Carmel Caruana [MT]</i></p> <p>Keynote • Education, Training and Registration of MPEs in Europe. An Overview. <i>Ad Maas [NL]</i></p> <p>EFOMP School for Medical Physics Expert. <i>Alberto Torresin</i></p> <p>Towards an Updated ESTRO-EFOMP Core Curriculum for Training of Medical Physics Experts in Radiotherapy-assessment of current training practice in Europe. <i>Cristina Garibaldi</i></p> <p>Radiomics and Artificial Intelligence. How Medical Physicists Can Help Their Translation into Radiology, Molecular Imaging and Radiation Therapy Routine Clinical Practice? <i>Yassine Bouchareb</i></p> <p>IAEA Human Health Campus and E-learning Platform. <i>Giorgia Loreti</i></p> <p>An innovative Combined Physics Medical Physics and Radiation Protection Undergraduate Degree. <i>Carmel J. Caruana</i></p> <p>Medical Radiation Protection. A Century of Governance, Ethics, Justification and Optimisation? <i>Jim Malone</i></p> <p>Custom-made Education in Radiation Protection for Health Care Workers. <i>Esther van Schroyenstein Lantman</i></p>
11.00	<i>Live Discussion & Coffee Break</i>	

SATURDAY 19 JUNE 2021

Time table	LIVE ROOM • TORINO	LIVE ROOM • PIEMONTE
	DIR	PROF, E&T
11.30	<p>Joint Session AAPM Cutting Edge Technologies in CT <i>Chair: Mika Kortensniemi (FI)</i></p> <p>High Resolution CT with Scintillating Detectors. <i>Ioannis Sechopoulos (NL)</i></p> <p>Photon Counting Detector CT. <i>Cynthia McCollough (USA)</i></p> <p>AI Applications in CT Image Formation. <i>Marc Kachelrieß (DE)</i></p>	<p>Scientific Session E&T, DIR, RPD <i>Chair: Alberto Torresin (IT)</i></p> <p>Keynote • History and Future of EUTEMPE-RX. <i>Hilde Bosmans (BE)</i></p> <p>Evaluation of Calcification Detectability for Different Breast Compositions in a Clinical Comparison between Digital and Synthetic Mammography. <i>Paola Baldelli</i></p> <p>Hemodynamical Assessment of Below-the-knee Arteries from Time-resolved CT Angiography on a 256-slice CT. <i>Pieter Boonen</i></p> <p>Correlation between Operator Eye Lens Doses and Transcatheter Cardiovascular Procedure Characteristic. Multi-parametric Linear Regression Model. <i>Luca Fedeli</i></p> <p>Machine Learning Estimation of Personalized, Organ-dose Absorption from CT Examinations. <i>Marios Myronakis</i></p>
12.30	<i>Live Discussion</i>	
12.50	<i>Lunch Break and Satellite Symposia (see page 33)</i>	
14.00	<p>Scientific Session RT <i>Chair: Marianne Aznar (UK)</i></p> <p>Keynote • New Technologies in Hadron Therapy. <i>Reinhard Schulte (USA)</i></p> <p>4D Restricted Robust Optimization in Intensity Modulated Proton Therapy for Hypofractionated Treatments of Lung Tumors. <i>Edoardo Mastella</i></p> <p>A Fully Automated Pipeline for Log File Based Dose Recalculation Using an Independent GPU-accelerated Monte Carlo in Proton Therapy. <i>Ilaria Rinaldi</i></p> <p>Development of Integration Mode Proton Imaging with a Single CMOS Detector for a Small Animal Irradiation Platform. <i>Katrin Schnuerle</i></p> <p>In-vivo inter-fractional Monitoring in Particle Therapy with the INSIDE In-beam PET. <i>Veronica Ferrero</i></p>	<p>Scientific Session Radiomics <i>Chair: Dimitris Visvikis (FR)</i></p> <p>Keynote • Radiomics for Nuclear Medicine. <i>Mathieu Hatt (FR)</i></p> <p>Radiomics features of 11[C]-MET PET/CT in Primary Brain Tumors. Preliminary Results on Grading Discrimination Using a Machine Learning Model. <i>Selene Richiusa</i></p> <p>CT Imaging Texture Analysis. Evaluation of the Effect of Reconstruction Algorithms and Kernels by Different Vendors. <i>Francesca Calderoni</i></p> <p>Lesion Dosimetry in Metastatic Thyroid Cancer Treated with 131I. Standardization of SPECT-TC Calculation Method with an In-house Software Tool and Preliminary Texture Analysis Results. <i>Elisa Richetta</i></p> <p>CT-based Radiomics as a Tool to Recognize COVID-19 Positive Patients. <i>Giulio Benetti</i></p>

SATURDAY 19 JUNE 2021

Time table	LIVE ROOM • TORINO	LIVE ROOM • PIEMONTE
	DIR	PROF, E&T
	<p>First Dosimetric Assessment of Proton Minibeam ARC Radiation Therapy. <i>Ramon Ortiz Catalan</i></p> <p>Real-time Positron Emission Imaging for Range Verification in Helium Beam Radiotherapy. <i>Peter Dendooven</i></p> <p>Photon-proton Dose Plan Comparison in the Pilot Phase of the Randomized Clinical DAHANCA 35 Trial. <i>Christian Hansen</i></p>	<p>Comparison of Automated Segmentation Techniques for Magnetic Resonance Images of the Prostate. <i>Federica Cattani</i></p> <p>Organic Phantom Study of MRI-radiomic Features Repeatability and Stability. <i>Chiara Tenconi</i></p> <p>Towards 4D Dedicated Breast CT Perfusion Imaging of Cancer. Computer Simulations of the Image Generation Process. <i>Marco Caballo</i></p>
15.30	<i>Live Discussion & Coffee Break</i>	
16.00	<p style="text-align: center;">Scientific Session DIR <i>Chair: Simona Avramova (BG)</i></p> <p>Keynote • New Technologies for Mammography Imaging. <i>Gisella Gennaro (IT)</i></p> <p>Patient-derived 3D Printed Breast Phantoms for Mammography and Digital Breast Tomosynthesis. <i>Antonio Varallo</i></p> <p>Preliminary Evaluation of a Novel Deep Learning Image Reconstruction (DLIR) Algorithm in Computed Tomography. <i>Paolo De Marco</i></p> <p>Applying a Machine Learning-based Approach to Predict Distant-relapse-free Survival in Upfront Resectable Pancreatic Adenocarcinoma Based on CT Radiomics. <i>Martina Mori</i></p>	<p style="text-align: center;">Scientific Session RT <i>Chair: Alejandro Mazal (ES)</i></p> <p>Keynote • PENH, a PENELOPE Extension for Proton Transport. <i>Francesc Salvat (ES)</i></p> <p>The impact of Commissioning Measurements Accuracy on the Configurations of both Acuros-XB and AAA Dose Calculation Algorithms for Photon Beams. <i>Emilia Esposito</i></p> <p>Gold Nanoparticles and SABR for Treatment Planning of Intact Breast Tumor. <i>Antonio Leal</i></p> <p>Forward Planning Approach for the Single-isocenter ARC Total Body Irradiation. <i>Elena Villaggi</i></p>
16.50	<i>Live Discussion</i>	
17.05	<p style="text-align: center;">ECMP Plenary Session <i>Chair: Mika Kortesiemi (FI)</i></p> <p style="text-align: center;">The Data-driven Future of Medical Physics <i>Leonard Wee (NL)</i></p>	
17.35	<p style="text-align: center;">Closing of the Virtual ECMP2020 and Looking forward to ECMP 2022 <i>Mika Kortesiemi (FI), Paddy Gilligan (IE)</i></p>	

Invited Talks on demand

Refresher Course

Nuclear Medicine. Quantitative Imaging

- Tracer kinetic modelling. *Ronald Boellaard [NL]*
- Correction and reconstruction algorithms. *Mark Lubberink [SE]*

Radiotherapy. MRI and Dual Energy CT in Radiotherapy. Competitive or Complimentary?

- Dual-energy CT for radiotherapy applications. *Wouter van Elmpt [NL]*
- MR-guided radiotherapy. *Simeon Nill [UK]*

Diagnostic and Interventional Radiology. Advanced CT Acquisition

- Advanced measurement techniques for CT. *Love Kull [SE]*
- Optimization of image quality for advanced CT acquisition. *Kristin Jensen [NO]*

Radiotherapy - SBRT. Physics Principles and In-vivo Dosimetry

- Physics principles of SBRT. *Nuria Jornet [ES]*
- In-vivo dosimetry for SBRT. *Marco Esposito [IT]*

Embracing Change, Sharing Knowledge

- Predicting radiotherapy outcomes using real-world clinical data. *Leonard Wee [NL]*

Scientific Session RT

- The potential of radiomics applications in radiotherapy. *Marta Bogowicz [CH]*
- Plan QA using plan analysis and complexity metrics. *Victor Hernandez [ES]*

Scientific Session NM

- Adaptive CZT body SPECT. *Laetitia Imbert [FR]*
- Digital PET. *Ronald Boellaard [NL]*

Scientific Session. Quality Management, Safety and Ethics

- Medical alarm systems. *Carola van Pul [NL]*
- Ethics in Radiological Protection for Medical Diagnosis and Treatment. *Marie Claire Cantone [IT], François Bochud [CH]*

Scientific Session DIR

- Approaches for optimization of CT examinations. *Elly Castellano [UK]*
- Fluoroscopic imaging. Noise reduction versus introduction of lag: comparison between different vendors. *Bente Konst [NO]*

Joint Session EFRS

- Optimising radiographic examinations when considering patient size. *Hendrik Erenstein [NL]*
- Radiographers and the BSS Directive: towards harmonised radiographic practice. *Shane Foley [IE]*

Joint Session EUTEMPE

- Educational aspects of the online part of EUTEMPE-RX modules. *Danielle Dobbe [NL]*
- An example EUTEMPE-RX module in Ferrara (Italy): advanced techniques in X-ray imaging. *Angelo Taibi, Paolo Cardarelli [IT]*

Joint Session IAEA

- IAEA human health campus and e-learning platform. *Giorgia Loreti [AT]*
- EFOMP Cone beam CT protocol: a joint initiative between EFOMP, IAEA and ESTRO. *Harry Delis [GR]*
- How Croatia and Serbia benefited from IAEA. *Dario Faj [HR], Borislava Petrovic [RS]*

EORTC Joint Session - The Role of Medical Physicists in Clinical Trials

- The EORTC management of clinical trials: the need of interdisciplinarity. *Enrico Clementel [IT]*
- The need of Medical Physicists' involvement in clinical trials. *Natalie Abbott [UK]*
- EORTC-EFOMP survey on dosimetry audits: preliminary results. *Oscar Casares [DK]*

Joint Session ESTRO - Challenges of Integration between the Different Disciplines in Medical Physics Related to Hybrid Equipment

- The value of quantitative imaging from hybrid PET-CT for the development of personalised approaches to radiation therapy EFOMP. *Stephane Chauvie [IT]*
- MR-guided radiotherapy: working at the boundary of MR physics and RT physics ESTRO. *Alina Elter [DE]*

ECMP Welcomes Spain: Proton Therapy

- Proton RBE: irradiating cells at CNA. *José Manuel Espino [ES]*
- The new proton-therapy facilities in Spain. *Alejandro Mazal [ES], Diego Azcona [ES], Samuel Ruiz-Arrebola [ES]*

Education, Training and Registration of Medical Physics Experts in Europe: Now and in the Future

- Education, training and registration supervised by the Government. *Antonio Lopez [ES]*
- Education, training and registration under national law: a Dutch treat. *Marion Essers [NL]*
- The new core curriculum for radiotherapy MPEs. *Cristina Garibaldi [IT]*

Special Focus Session - Professional Matters: Mentorship

- How to write a grant application. *Yolanda Prezado [FR]*
- How to write a scientific paper. *Annalisa Trianni [IT]*

Oral Communications on demand

1 - Radiotherapy (RT)

- Automatic eclipse planning using Script and RapidPlan for prostate SBRT. *Alberto Alarcon Paredes*
- Treatments over weekends to compensate for scheduled and unscheduled interruptions. *Eva Ambroa Rey*
- Impact of registration uncertainties on the prediction of early tumour response to radiotherapy in NSCLC patients. *Lameck Mbangula Amugongo*
- An assessment of the accuracy of the different delivery methods of stereotactic brain radiotherapy. *George Antorkas*
- Can radiomics predict clinical relapse after Partial Prostate Re-irradiation (PPR) for isolated locally recurrent prostate cancer? *Michele Avanzo*
- Treatment planning system calculation accuracy in the out of field dose region and their consequences in pacemaker dose estimation. *Agnese Barbareschi*
- Output factors for small radiation therapy electron beams collimated by tubular applicators. A multi-detector comparison. *Silvia Bettarini*
- Investigating a novel gantryless positioning solution in protontherapy. *Faiza Bourhaleb*
- PlanIt: planning with intelligent radiation therapy platform for treatment plan verifications. *Faiza Bourhaleb*
- Dose-volume effect for acute patient-reported intestinal toxicity from whole pelvis radiotherapy. An Italian multicentric study. *Andrea Bresolin*
- Characterization of 3D printing materials for manufacturing patient-derived compressed breast phantoms. *Roberta Castriconi*
- Knowledge-based (KB) automatic plan optimization can replace manual planning in tangential field irradiation for right breast cancer radiotherapy. *Roberta Castriconi*
- Pre-clinical validation of Mobius3D 3.0 System. *Nina Cavalli*
- Spatial dose patterns associated to cardiac toxicity and survival in patients treated with photons and protons for lung cancer. *Laura Cella*
- A multiscale model for oxygen delivery and radiation damage within the microenvironment. *Alessandro Cicchetti*
- Evaluation of MR image correction schemes for accurate lesion localization in intracranial stereotactic radiosurgery. *Dimitrios Dellios*
- Dosimetric impact of intrafraction motion during moderate hypo-fractionated prostate cancer radiotherapy treatment. *Francesca Di Franco*
- Physical characterisation of commercial ear impression materials for use as a bolus in radiotherapy. *Paul Doolan*
- Dual energy CT for preclinical cancer research. *Manuela Duda*
- Evaluation of a cycle-generative adversarial network-based synthetic cone-beam CT generation method for adaptive radiation therapy and daily treatment planning. *Miriam Eckl*
- Case report. Online adaptive magnetic resonance-guided radiation therapy for patient with pacemaker. *Randa El Gawhary*
- Virtual tangential-fields Arc therapy (ViTAT) for whole breast irradiation. Technique optimization and validation. *Pier Giorgio Esposito*
- MRI-only in prostate radiotherapy planning using multiple individual atlases. *Marco Felisi*
- A feasibility study. Can a vol/dose model in HNC standardize plans and optimize planning time? *Paolo Ferrari*

- Inter-fractional monitoring in particle therapy treatments with ¹²C exploiting the detection of secondary particles. Preliminary clinical trial results at the CNAO facility. *Marta Fischetti*
- Analysis of the plan complexity produced by a knowledge based planning system for head and neck cancer. *Marco Fusella*
- Inverse consistency error as a validation metric for deformable image registration. Preliminary implementation research. *Marco Fusella*
- The investigation of RBE-weighted dose and LETd distribution for skull base patients in proton therapy and correlation with observed necrosis regions. *Magdalena Garbacz*
- Feasibility study for the realization of individualized 3D printed phantom for dosimetry with accurate Hounsfield Units correspondence with real tissues. *Maria Antonietta Gilio*
- Dose to head and neck OARs during a TomoTherapy treatment. Comparison between measurements and TPS calculation. *Maria Antonietta Gilio*
- Machine learning-based predictive model of radiation-induced dysphagia resulting from head and neck cancer IMRT. *Alessia Giuliano*
- Detector selection impact on small field dosimetry of collecting beam data measurements among versa HD FFF beams. A multi-institutional variability analysis. *Boran Gungor*
- A method using 4D dose accumulation to quantify the interplay effect in lung tumor coverage. *Carlos Huesa*
- Using an electronic portal imaging device for routine electron constancy assessment. *Leticia Irazola Rosales*
- An innovative polymer gel dosimeter in a 3D printed head phantom for stereotactic radiosurgery dose verification. A feasibility study. *Francesca Itta*
- Acceptance procedure for beam-matched linacs. *Katia Jacob*
- Positioning accuracy and reproducibility of the PTW TruFix System. *Lucia Lado Cacheiro*
- Comparison of detectors performances in small field dosimetry of Versa HD flattened and flattening free beams. *Mariaconcetta Longo*
- Feasibility study of the use of nanoparticles as theragnostic agent in radiotherapy. *Josè Antonio Lopez Valverde*
- Determination of ion recombination and polarity effects for the PTW Advanced Markus ionization chamber in synchrotron based scanning and collimated proton beams for ocular treatment. *Davide Maestri*
- Feasibility robustness and dosimetric accuracy of the treatment of face and scalp with helical tomotherapy. *Livia Marrazzo*
- A semi-automatic planning technique for whole breast irradiation with tangential IMRT fields. *Livia Marrazzo*
- Towards real-time EPID-based 3D in-vivo dosimetry using machine learning. *Juliana Cristina Martins*
- Changes in patient anatomy or setup. Replanning predictive power of tomotherapy sinograms gamma analysis by using delivery analysis. *Anna Miranti*
- Patient-QA prediction. A new approach of complexity indexes. *Stephane Muraro*
- Evaluation of a novel dose optimization software Leksell Gamma Knife Lightning. Comparison of treatment plans for 40 challenging clinical cases. *Markéta Farníková*
- Design and validation of a phantom for a mailed dosimetric audit of HDR brachytherapy. *Laura Oliver Cañamás*
- Multicenter QA protocol for lung SBRT. *Stefania Pallotta*
- Clinical kick-off of RayPilot® HypoCath® real time tracking. a novel electromagnetic device without surgical intervention to evaluate the intrafraction motion during extreme hypofractionation of localized prostate cancer stereotactic body radiation therapy. *Denis Panizza*

- Our experience using gEUD in breast VMAT optimization. *Chiara Pellegrini*
- Phantom study of stereotactic radioablation treatments for ventricular tachycardia (STRA-MI-VT) using Cyberknife synchrony respiratory tracking system with a single fiducial marker. *Consiglia Piccolo*
- Reference dosimetry in high dose per pulse IORT electron beams using ionization chambers. *Maria Pimpinella*
- Advancing the Italian National Standard of absorbed dose to water in medium energy x-rays. *Massimo Pinto*
- Stability of dosimetric features extraction on dose voxel cube pixel spacing and calculation grid resolution and algorithm. *Lorenzo Placidi*
- Dosimetric and planning evaluation of IMRT vs VMAT-like plans for magnetic resonance guided radiotherapy treatment. *Lorenzo Placidi*
- Dosimetric characterization of a new transmission detector for patient-specific in-vivo plan verification. *Lorenzo Radici*
- Our first experiences with Hyper Arc and Elements Multi Brain Metastases techniques. *Giorgio Hamid Raza*
- Bias-free comparison of VMAT and IMRT strategies for left-sided whole breast irradiation using automated planning. *Laura Redapi*
- Predicting breathing target motion from a surrogate signal during radiotherapy. A Bayesian approach. *Charlotte Remy*
- Use of genetic algorithm for optimization of PTV in single isocenter multiple metastases radiosurgery treatments with BrainLab Elements. *Jose Alejandro Rojas-Lopez*
- Evaluation of Superficial and Intracavitary in vivo Dosimetry Using OSLD nanoDot in 3D Conformational and Intensity Modulated Radiotherapy. *Jose Alejandro Rojas-Lopez*
- Dual wavelength reading method of Fricke-Xylenol orange-Gelatin gel dosimeters with cone-beam optical CT scanner for applications in stereotactic radiotherapy. *Alice Rousseau*
- “3CRT-Like” Dynamic MLC IMRT for whole breast irradiation. Development of an inverse planning optimization protocol for OARs sparing and dosimetric comparison versus conventional 3DCRT and VMAT. *Giulia Sangalli*
- Three years, experience with Knowledge-based planning. A longitudinal evaluation of plan quality, optimization time and KBP-models adequacy for prostate treatments. *Alessandro Scaggion*
- Advancing proton minibeam radiation therapy through magnetic focussing. *Tim Schneider*
- Development and validation of a 3D neutron therapy planning system for FRM 2. *Lucas Sommer*
- Polymer gel dosimeters for absolute high resolution pre-treatment dosimetric QA in RT. *Luca Trombetta*
- Investigation of bolus effect on skin dose in total body irradiations by helical tomotherapy. *Gökçe Uçar Alveroglu*
- Beam matching of two Elekta Linac. *Angela Vaiano*
- Fluence prediction for lung IMRT using a convolutional neural network. independent model against gantry and collimator angles. *Liesbeth Vandewinckele*
- Dual-window VMAT. Machine consistency testing using a commercial rotating phantom. *Frederik Vanhoutte*
- Multi Criteria Optimization (MCO). A tool for educational purposes to reduce the inter operator planning variability and to improve best class solution models used in clinical routine. *Luca Leandro Vigna*

2 - Diagnostic and therapeutic nuclear medicine (NM)

- INSPIRE clinical dosimetry study. Initial results. *Carla Abreu*
- Targeted alpha PSMA-based therapy of metastatic castrate-resistant prostate-cancer patients (mCRPC). Prediction dosimetry. *Maria Luisa Belli*
- Correlation between 18F-FDG PET-CT metrics and the pathological response in esophageal cancer treated with induction chemotherapy followed by neoadjuvant chemo-radiotherapy. Conventional and radiomic features. *Carlo Cavedon*
- Gamma Agreement Index test for dose distribution comparisons in Selective Internal Radiation Therapy (SIRT) procedures with 90Y. *Amedeo Capotosti*
- How to identify robust PET image features for their use in quantitative analysis. *Montserrat Carles*
- 18F-FDG-PET Radiomic assessment for RT treatment strategy in patients with head and neck cancer. A feasibility study. *Margherita Betti*
- Red marrow dosimetry in 131I treatment of metastatic thyroid cancer. Comparison of mathematical models. *Giovanni Intermite*
- Clinical impact on the radiotherapy treatment planning of the new EARL FDG-PET/CT accreditation versus the previous EARL1. *Elisa Jimenez Ortega*
- Impact of reduced acquisition time in PET/CT lesion detectability. Study with an anthropomorphic female thoracic phantom. *Joseph M. Martí-Climent*
- Optimization of 18F-FDG oncological examination on a TOF-PET/CT scanner. Results of a multicenter preliminary study. *Roberta Matheoud*
- Radioembolization of hepatocarcinoma with 90Y glass microspheres: why predicted absorbed dose differ from actual values? *Stefania Mazzaglia*
- Influence of volumes, scan times and radiotracer distributions on PET radiomics features. A phantom study. *Lisa Milan*
- A validated PET radiomics model predicts outcome of diffuse large B cell lymphoma. Post-hoc analysis from the SAKK38/07 clinical trial. *Lisa Milan*
- Towards an automated approach to the semi-quantification of 18F-DOPA PET in pediatric diffuse astrocytic tumors. *Enrico Peira*
- A PET-Based Radiomics Model of Brain Metastasis. *Selene Richiusa*
- Dosimetry in therapy with 90Y microspheres and 177Lu-DOTATATE. A comparison between the standard method and a commercial software. *Anna Rienzo*
- Feasibility study of a wearable individual dose monitoring apparatus, an innovative approach for molecular radiotherapy. *Elena Solfaroli Camillocci*
- PRRT for patients with neuroendocrine tumor. how does the reduction in the number of SPECT CT studies affect tumor and OAR dosimetry? *Eugenia Tonini*
- Quantitative accuracy and 28-day Test-retest repeatability of parametric methods for [11C]UCB-J PET. *Hayel Tuncel*
- Mathematical modelling for the evaluation of the kinetic stability of a bifunctional chelating system for 212Pb. *Nouran Zaid*

3 - Diagnostic and interventional radiology (DR)

- Phantom study of contrast enhanced spectral mammography. *Cinzia Avigo*
- Performance comparison of mammography systems with FFDM DBT and CESM. A dosimetry study. *Simona Avramova*
- Comparison of patient effective doses from multiple CT examinations based on different calculation methods. *Simona Avramova*
- An in-depth assessment of variability in image quality across five different CT scanners as clinically used for routine head examinations. *Patrizio Barca*

- 3T DCE-MRI radiomics for prediction of complete response to neoadjuvant chemotherapy in breast cancer. *Giulio Benetti*
- Diffusion Tensor Imaging. Differences between probabilistic and deterministic approaches in epileptic patients and healthy subjects. *Luca Berta*
- Effect of pre-processing on radiomic features estimation from computed tomography imaging in patients with locally advanced rectal cancer. *Rita Borgheresi*
- Local patient diagnostic reference levels and impact of a commercial dose reduction system on dosimetric quantities in paediatric interventional cardiology. *Alessio Boschini*
- CT imaging texture analysis. Evaluation of variability sources in the different steps of radiomic workflow. *Francesca Calderoni*
- Organ dose estimation in paediatric CT exams collected in a multicentre database. *Federica Campanaro*
- Evaluation of radiation dose exposure for interventional and diagnostic neuroradiology procedures using a radiation dose index monitoring software. *Paola Enrica Colombo*
- Dose tracking solution for computed radiography systems. An application in neonatal intensive care unit. *Denise Curto*
- Estimation of effective and organ doses in patient undergoing to hepatobiliary interventional procedures. *Andrea Dalessio*
- Impact of reconstruction algorithm on a Computer Aided Detection (CAD) system. Comparison of the lung lesion contouring and of the texture analysis. *Cristina De Mattia*
- One-shot learning for diffeomorphic deformable medical image registration and periodic motion tracking. *Tobias Fechter*
- Strategy for paediatric head CT exposure optimization. Protocols and workflows. *Margherita Betti*
- Reliability of quantitative diffusion weighted imaging. A large multicenter and multiparametric study based on a unsupervised clustering analysis. *Luca Fedeli*
- MR imaging of testicular lesions. The potential role of radiomics biomarkers in the characterization of focal testicular lesions. *Giacomo Feliciani*
- Investigation of 68-Ga PSMA PET and multiparametric MRI imaging radiomics based models in the prediction of ISUP score in prostate cancer patients. *Giacomo Feliciani*
- Characterization of the spectral response of CSI flat panel detectors in digital radiography. *Aitor Fernandez Iglesias*
- Predicting early mortality of COVID-19 patients of the first pandemic wave based on automatically extracted lung densitometry parameters. *Claudio Fiorino*
- Manufacturing process of a 3D printed model of an arteriovenous malformation. *Pasqualina Gallo*
- Potential role of Dual-Energy CT in brain imaging. Accuracy of iodine concentrations. *Pasqualina Gallo*
- A fully automatic analysis tool for quantitatively assessment of MRI scanner performances using ACR phantom. Preliminary results. *Mohamad M. Aalabdoaburas*
- Effect of acquisition geometry and reconstruction process on image quality parameters of 2D synthetic mammogram. A phantom study. *Arcangela Maldera*
- Dual Energy CT combined with Infrared Spectroscopy. Imaging to predict urinary stones composition and stiffness. *Alberto Mari*
- Overscanning and overbeaming in 256 MSCT and DSCT. *Alberto Mari*
- Thalamic parcellation for target identification in trans-cranial MR-guided Focused UltraSound (tcMRgFUS) thalamotomies. A preliminary probabilistic tractography study. *Maurizio Marrale*
- Characterization of 3D printing materials for manufacturing patient-derived compressed breast phantoms. *Aldo Mazzilli*
- Head rotation effects on head and neck hemodynamics by 4D-PC MR imaging and mathematical modelling. *Parvin Mohammadyari*
- Diffusion Kurtosis Imaging (DKI). Measurement optimization on the basis of a quantitative diffusion phantom. *Linhsia Noferini*

- Lung nodule detection confidence index (rating) optimization. *Pedro Luis Ordonez Valverde*
- Correlation of peak skin dose with dose indicators and geometric factors in vascular interventional radiology. A general linear model approach. *Maria Oronzio*
- Radiation dose reduction and static image quality assessment using a channelized hotelling observer on an angiography system upgraded with clarity IQ. *Ornella Ortenzia*
- A Pilot Study to Establish DRLs in Interventional Radiology Procedures. *Ismail Ozsoykal*
- Periodic quality control of ultrasound scanners. Practical experience with IEC 62736 technical specification and comparison with other evaluation methods. *Claudia Pasquali*
- Organ dose evaluation in radiological monitoring of paediatric Ollier disease. *Anna Piai*
- Small-size details detection performance of digital breast tomosynthesis synthetic 2D and conventional full-field digital mammography images for different mammography systems. A multicenter study. *Valentina Ravaglia*
- Average glandular dose in digital breast tomosynthesis systems. A multicenter study. *Valentina Ravaglia*
- A machine learning classifier for Digital Breast Tomosynthesis. A first step. *Roberta Ricciardi*
- Reproducibility of radiomic features in CT images of NSCLC patients. *Lisa Rinaldi*
- A prototype of heterogenous insert simulating lung lesions for quantitative texture analysis in CT acquisitions. *Lisa Rinaldi*
- Local diagnostic reference levels in paediatric patients with cystic fibrosis undergoing follow up CT scans. *Veronica Rossetti*
- The role of MR diffusion kurtosis method in brain metastases imaging. *Sevim Sahin*
- Establishment of Swiss DRLs in Dental CBCT. *Marta Sans Merce*
- AGATA. Advanced Geant4-based application for in-silico clinical trial in x-ray breast imaging. *Antonio Sarno*
- Implementation of T1-T2 mapping quality assurance in cardiovascular magnetic resonance. *Luisa Pierotti*
- Diffusion tensor imaging. Differences between probabilistic and deterministic approaches in epileptic patients and healthy subjects. *Alberto Torresin*
- Using difference detail curves to assess image quality of low contrast abdominal CT scans. *Mathias Weyland*
- Local DRLs for two different cardiac imaging modalities at a University Hospital in Greece. *Despoina Zarketan*

4 - Radiation protection and dosimetry (RP)

- Performance Evaluation of the ISOCS system as a WBC for IN-VIVO radioactive contamination measurements. *Leonardo Baldassarre*
- Development of a web-app for dose class estimation in radiological procedures. *Mauro Campoleoni*
- Dosimetric evaluation to medical workers operating in a PET/CT department after the use of in house production of Ga-68 peptides. *Konstantinos Dalianis*
- Day Hospital radioiodine remnant ablation. Our experience. *Giovanni De Pascalis*
- Assessment of noise reference levels in abdomen CT. *An Dedulle*
- Novel application of a comparison metric between software simulation and radiochromic film skin dose maps in interventional radiology procedures. *Marco Felisi*
- Couch aluminium activation in high energy LINAC. Workers exposure. *Cesare Gori*
- Towards optimization of restriction protocol for Lu-DOTATE patients. *Leticia Irazola Rosales*

- 3D diamond detectors for small field dosimetry. *Keida Kanxheri*
- Volumetric dose effect of internal shielding disks in IOERT. A Monte Carlo-based study. *Gabriele Magugliani*
- A task based dosimetric assessment of interventional cardiologist behaviour using a real-time active dosimetry system. *Susan Maguire*
- A Large Area GEMPix detector for treatment plan verification in hadron therapy. *Andreia Maia Oliveira*
- Medical radiation protection. A century of governance, ethics, justification and optimisation? *Jim Malone*
- Shielding assessment for a shielded gantry accelerator Halcyon. *Gema Martin Cale*
- Implementation of an in-vivo dosimetry system for VMAT. *Sofia Faustino, Sara Germano*
- Implementation and impact of the American College of Radiology (ACR) size-specific Diagnostic Reference Levels (DRL) in adult CT body examinations. *Sonia Sapignoli*
- Average glandular dose values and diagnostic reference levels in digital breast tomosynthesis. *Edoardo Petrucci*
- Internal dosimetry Monte Carlo study of TARE treatments. A comparison between GATE and GAMOS focused on lung dosimetry and background correction. *Daniele Pistone*
- Multicentric comparative study of dose indexes using an in vivo optical fiber detection system. *Christian Popotte*
- Ambient dose equivalent due to neutron contamination during a radiotherapy treatment. *Mariagrazia Quattrocchi*
- In-plane Saba shielding for dose reduction to the eye at head CT. *Valiallah Saba*
- Calibration radioprotection and dosimetry in ¹⁷⁷Lu-Lutathera[®] treatment. *Paola Saletti*
- Evaluation of glandular dose distribution in 2D and 3D x-ray breast imaging. *Antonio Sarno*
- Use of CMOS Image Sensor to characterize brachytherapy HDR afterloader. *Leonello Servoli*
- Flattening filter and flattening filter free dose comparison. In beam and entrance door measurement and Monte Carlo simulation. *Arpad Toth*
- Monte Carlo calculation for dedicated mean glandular dose estimates in commercial DBT scanners using homogeneous phantoms. *Raffaele Maria Tucciariello*
- Evaluation of the air kerma distribution at the breast surface in mammography and breast tomosynthesis. *Chiara Valero*

5 - Biomedical engineering (BE)

- MRI safety application of the magnetic resonance-based electric properties tomography. *Alessandro Arduino*
- CT textural features in multi-center analysis. An example of tuning effort. *Cristina De Mattia*
- Clinical validation of a segmentation tool for pulmonary nodules in lung cancer screening. *Noemi Garau*
- Micro-CT image segmentation of dental implants for the visualization of gaps. *Margarita Chevalier*
- Processing of Musculoskeletal Dynamic computer tomography images. A multi-atlas segmentation approach. *Benyameen Keelson*
- Radiomic analysis for prediction of nodal status in lung cancer simulated data. Comparison of machine learning methods. *Giuliana Lo Presti*
- New frontiers in pre-operative planning of complex spinal deformities. *Marco Valenti*
- A novel deep learning model to differentiate IDH-mutant from IDH-wild type on cohort of GBM cases. *Antonio Napolitano*
- Towards accurate modeling and determination of dosing errors in multi-infusion. *Annemoon Timmerman*
- MRI and metallic implants. Heating risk by radiofrequency and switching gradient fields. *Umberto Zanovello*



INDEX

Oral Communications on demand

6 - Informatics (IT)

- Augmented reality supporting innovation and accuracy in advanced radiation therapy facilities. *Fabrizio Bello*
- Delineation bias in hand-crafted radiomic features. *Alessio Romita*
- A Machine-learning radiomics approach in prostate cancer studies. *Giorgio Russo*
- Random Forest Regression on CT data to predict effective dose and class of effective dose in compliance to the new Italian regulation. *Matteo Ferrante*

7 - Professional issues (PR)

- Transforming yourself into a strategic and robust medical physics leader. *Carmel J. Caruana*
- MR-guided Laser-induced thermal therapy. The role of medical physicist in implementation. *Maria Bernadetta Ferrari*
- Assessment of the scientific production of the Italian Association of Medical Physicists (AIFM) in the last 5 years. *Cristina Garibaldi*
- Images and reflections for medical physics. Ten artworks to challenge and inspire. *Jim Malone*
- IAEA survey on image-guided radiotherapy protocols and doses in the European region. *Primoz Peterlin*

8 - Education and training (ET)

- DQPRM. French model for the training of medical physicists. *Cecilia Coletta*
- Chest radiography protocol optimization in neonatal intensive care unit. Findings before and after staff training. *Lorenzo Nicola Mazzoni*

Posters

1 - Radiotherapy (RT)

- Radiobiological modelling of concomitant radiochemotherapy for patients with locally advanced non-small cell lung cancer. A tumour control probability perspective. *Mohammed Alaswad*
- Influence of radiotherapy dose uncertainty on local tumour control for locally advanced non-small cell lung cancer. *Mohammed Alaswad*
- A feasibility study of Simultaneous Integrated Boost (SIB) advanced techniques in the treatment of breast cancer and supraclavicular nodes. *Maria Chiara Angiocchi*
- Pre-treatment QA results of stereotactic plans against target volume and plan complexity. *George Antorkas*
- Deep learning method for Tomotherapy Delivery Quality Assurance: prediction of 3dimensional dose distribution and performance evaluation on phantom. *Danilo Aragno*
- Dosimetric calculations of the imaging dose, quantification of the scattered radiation and realization of its origin in CyberKnife radiosurgery. *Panagiotis Archontakis*
- A beam monitor transmission detector for small and large fields dosimetry. *Veronica Ardu*
- On the use of an in-house built phantom for the evaluation of Treatment Planning System calculation accuracy in lung treatments. *Agnese Barbareschi*
- Auto-planning evaluation of moderately hypofractionated prostate tumor radiotherapy treatment. *Antonietta Bartoli*
- Study of ion chamber dose calibration in kV-CBCT-based IGRT using different protocols. *Jose Bea Jilbert*
- Influence of magnets on 6 MV irradiation plans during ICD deactivation. *Larissa Blümlein*
- Assessment of delivered dose in prostate cancer radiation therapy through transit dosimetry and volumetric imaging. *Monica Bono*
- Deep Inspiration breath hold and free breathing techniques for left sided whole breast radiotherapy. A dosimetric evaluation. *Monica Bono*
- Characterization of an analysis tool for the picket fence. *Julien Boudet*
- Validation of a reference mechanical play of a portal imager for the rotating picket fence analysis. *Julien Boudet*
- Comparison of AAA (Anisotropic Analytic Algorithm) and AXB (Acuros-XB) calculation algorithms in heterogeneous medium with elementary geometry using radiochromic films. *Katrina Caikovska*
- Evaluation of patients setup accuracy and determination of planning target volume (PTV) margin in moderate hypofractionated volumetric arc therapy (VMAT) of localized prostate cancer using CBCT. *Paolo Caricato*
- Salvage stereotactic external beam re-irradiation for prostate cancer local failure. Finding safe dose constraints for principal organs at risk. *Federica Cattani*
- IMRT beamlet intensity optimization with tensor network methods. *Samuele Cavinato*
- Error detection sensitivity of a commercial system for EPID based transit dosimetry. A single institution study in a thorax phantom. *Francesco Cesarini*
- SGRT tolerance table optimization through transit dosimetry in DIBH left-sided breast radiation therapy. A preliminary study. *Francesco Cesarini*
- Calibration of EBT3 Gafchromic film using HNN deep learning. *Liyun Chang*
- Comparison of the use of a Vision RT QA cube and a Winston-Lutz test phantom to verify the discrepancy between a linac radiation isocentre and its mechanical isocentr. *Ching Choi*
- Analysis of unscheduled downtime and most frequent breakdowns in a single institution. *Montserrat Colomer Truyols*



INDEX

Posters

- Dosimetric influence of immobilization devices in external radiotherapy and dose calculation optimization. *Luís Cunha*
- FRED: a fast Monte Carlo code on GPU for treatment planning software. *Micol De Simoni*
- Backscattering in IOeRT breast carcinoma treatment. *Silvia De Stefano*
- Bolus as a shaper in the superficial lesions treatment with an electron beam. *Felipe Arturo Derecho Torres*
- A novel isodose surface-based method for patient specific QA analysis. *Stefanos Diamantopoulos*
- Could plan modulation complexity score replace pre-treatment QA during the COVID-19 pandemic? *Paul Doolan*
- Gold nanoparticles in external beam radiotherapy. A Monte Carlo study. *Efstathios Efstathopoulos*
- Scattered radiation loss in verification of long radiation fields with OCTAVIUS 4D. *Jesus Escobar-Cerezo*
- Off-isocenter positioning evaluation. A custom-made phantom study. *Rocío Estrada García*
- Automatic segmentation of prostate on TRUS images using convolutional neural networks. *Tobias Fechter*
- Intraoperative radiation therapy treatment planning system with image-guided docking. *Giuseppe Felici*
- Automation of tasks for VMAT QA with an in-house developed application. *Aitor Fernandez Iglesias*
- A feasibility study. Can DIBH reduce dose in left breast cancer radiotherapy? *Paolo Ferrari*
- Delivery and monitoring of particle therapy with a new integrated system. *Veronica Ferrero*
- Comparison between simulation PET-CT and fusion with diagnostic PET-CT in head and neck radiotherapy planning. Effects on target volume determination. *Alice Ferretti*
- Simulation PET-CT-based direct planning in Head and Neck Radiotherapy. Treatment planning implications and preliminary outcome. *Alice Ferretti*
- Commissioning and performances evaluation of a novel treatment planning system for radixact tomotherapy system. *Marco Fusella*
- Do computed tomography radiomic features change according to toxicity grade for patients with early stage lung cancer underwent SBRT? *Elena Gallio*
- Registration modes of small lung lesions with asymmetric movement pattern. *Maria Jesus Garcia Hernandez*
- Initial experience with in vivo and pretreatment transmission detector for pre-treatment 2D and 3D dosimetric verification of volumetric arc therapy. Evaluation of correlation between gamma index and dose-volume histogram. *Diego Gaudino*
- Impact of anatomical characteristics of heart and lung to the outcome of 3DCRT left breast radiotherapy. *Ivan Gencel*
- Dosimetry accuracy of the Radixact® system with Synchrony®. *Francesca Romana Giglioli*
- Breast VMAT optimization using uniform equivalent dose (EUD) objectives at organs at risk. *María Gil Conde*
- A small field study for stereotactic radiosurgery volumetric modulated Arc therapy. *María Gil Conde*
- Implementation of cranio-spinal irradiation in VMAT for pediatric medullo blastoma. *Giulia Giovannini*
- Head and neck district irradiation. VMAT vs. tomotherapy. *Alessia Giuliano*
- Case study. 3D rapid manufactured bolus for breast cancer treatment with external beam radiotherapy. *Susana Gonçalves*
- Accumulated dose basing on Extended CBCT in adaptive radiotherapy for head and neck patients. *Marius Gruda*
- Assessment of SciMoCA as second dosimetry check in the clinical routine practice. *Federica Guida*
- External audit of a recently installed versa hd accelerator (ELEKTA). *Silvia Gutierrez Ramos*
- Development of chemoradiation therapy targeting EGFR for triple negative breast cancer. *Takamitsu Hara*
- VMAT dosimetry with dynamic thorax phantom. *Henna Hietala*

- 2D VMAT verification in dynamic thorax phantom. *Henna Hietala*
- Feasibility study: is TPS scripting able to automate part of the prostate treatment planning process without deteriorating plan quality? *Stefan Hofer*
- Assessment of the influence of shoulder movement on the plan quality of different VMAT techniques in head and neck cancer treatments. *Stefan Hofer*
- First experience of single-fraction lung SBRT with Radixact Synchrony tracking method: preliminary comparison of dose distribution with radiochromic film dosimetry. *Fabrizio Levrero*
- Leksell gamma knife icon. Quality assurance for CBCT and its clinical use. *Markéta Farníková*
- An end to end test for brachytherapy treatment. *Tatjana Ignjic*
- Evaluation of a planar diode matrix for SRS patient-specific QA in comparison with GAFchromic films. *Erminia Infusino*
- Accounting for skin flashing in tomotherapy breast cancer treatment planning via organ motion based robust optimization. A feasibility study. *Francesca Itta*
- Verification of dose delivery for gated treatment using Clinac iX and True Beam. *Dražan Jaroš*
- Case report. SBRT treatment planning for a left breast oligo progression in prone position. *Aljasa Jenko*
- Commissioning of an independent dose calculation tool. *Gunnar Just*
- Dosimetry in 1.5T MR-linacs using plastic phantoms. The effect of air gaps for a variety of ionization chambers. *Pantelis Karaiskos*
- On the use of OSLDs for in-vivo measurements of surface dose in breast radiotherapy treatments. *Pantelis Karaiskos*
- Challenges in radiotherapy. Bilateral breast irradiation with lymph nodes using 3D conformal technique. *Melinda Kirei*
- The effect of the COVID-19 pandemic and restrictions on a radiation oncology clinic in Turkey. *Nur Kodaloglu*
- A shielding design for third reirradiation during TBI. *Nur Kodaloglu*
- Dose rate mapping and radiobiological assessment of Helical TomoTherapy prostate and head and neck treatments. *Panagiotis Kouris*
- Evaluation of effect on dose due to displacement of bowel and target volume in SBRT treatment for oligorecurrent crastation sensitive prostate cancer patients. *Francesco La Fauci*
- Imitation of sino-nasal cavity cancer case irradiation with a high energy photons using individualized 3D printed bolus. *Jurgita Laurikaitiene*
- Validation of a robust optimization approach for VMAT treatment planning of Stereotactic Ablative Radiation Therapy (SABR) in Lung Cancer. *Gianfranco Loi*
- Automatic feathering algorithm for VMAT craniospinal irradiation. A comprehensive comparison with other VMAT planning strategies. *Michele Maddalo*
- Metal Oxide Field Effect Transistors (MOSFETs) versus Optically Stimulated Luminescence Detectors (OSLDs). Technology in total body irradiation. *Eleonora Maggiulli*
- Machine Learning Models based on radiomic features extracted from lung cancer CT images. *Maurizio Marrale*
- Absolute dose measurements for ¹⁹²Ir high-dose-rate sources using micro-ionization chambers. *Miguel Martinez Albaladejo*
- Comparison of rigid and deformable co-registration between mpMRI and CT images in radiotherapy of prostate bed recurrence. *Marica Masi*
- Radiotherapy for breast cancer with the field-in-field technique. Assessment of the probability for developing a secondary malignancy in the contralateral breast using linear and non-linear models. *Michalis Mazonakis*

- Patient-specific radiation-induced rectal cancer risk assessment due to volumetric modulated arc therapy for prostate cancer. *Michalis Mazonakis*
- Update of the Italian guidelines for intra-operative radiation therapy. *Loris Menegotti*
- k_{Q,Q_0} for Cyberknife from the assesment of $TPR_{(20,10)}=f(PDD_{(20,10)})$ in standard reference conditions. *Victoria Eugenia Morato García*
- A real world implementation of IPEM81 TPS QA recommendations, using a commercially available software platform. *Alexandros Mourounas, Martin Wray-Cook*
- Relationships between bladder volumes in prostate cancer radiotherapy treatment with dose tracking. *Magdalena Murawska*
- Implementation of IAEA TRS 483 in small field dosimetry of Leksell Gamma Knife Icon. Transition from IAEA TRS 398 to IAEA TRS 483. *Josef Novotny*
- Use of an ion chamber array for the quality control of low-energy x-ray systems. *Albert Onsès-Segarra*
- Stereotactic radiosurgery for multiple brain metastases. Does MR/CT co-registration improve target localization accuracy compared to the MR-only approach? *Eleftherios Pappas*
- Stereotactic radiosurgery for multiple brain metastases. Dosimetric performance of two planning techniques and two setup approaches. *Chryssa Paraskevopoulou*
- Assesment of different CT simulators used in radiotherapy treatment planning- regional multicentric study. *Borislava Petrovic*
- Error detection capability of a new transmission detector for patient-specific in-vivo VMAT delivery verification. *Edoardo Petrucci*
- Study of the correlation between the Gamma Approval Rate and the MCSv Complexity Index of External Radiotherapy treatment plans with dynamic MLC. *Diana Jorge Pimparel Alves Nuno Pinto*
- The dosimetric impact of applying a model based dose calculation algorithm for non-melanoma skin cancer interventional radiotherapy. *Elisa Placidi*
- Influence of the Agility MLC projected leaf positional offsets on the quality of VMAT-SRS for multiple brain metastases. *Georgia Prentou*
- SBRT planning ideas for spinal metastasis. *Giorgio Hamid Raza*
- Characterization of the energy response of microMOSFET detectors for in vivo dosimetry in high dose rate brachytherapy. *Catalina Rodriguez Cano*
- Study of the influence of shoulder movement in treatment planning with Pinnacle 16.2. *Juan Román-Raya*
- Infinite solutions for an exact geometric matching in Breast and Supraclavicular fossa isocentric radiotherapy. *Nando Romeo*
- Absorbed dose due to daily CBCT positioning image on Halcyon 2.35.3.1 linear accelerator using size-specific dose estimates. *Desiree Roncero-Torres*
- Quality assurance for automatic 4D-CT mid-ventilation selection. *Hella Sand*
- Robustness of DIBH VMAT treatment plans of left breast cancer with SGRT. A comparison study in two French clinics. *Magali Sandt*
- A IOERT Geant4 Monte Carlo simulation for the computation of field Output Factors and 3D Dosimetry. *Sara Savatovic*
- Artificial Intelligence-based contouring and planning algorithms for prostate cancer radiotherapy. *Gwenaëlle Sidorski*
- Comparison of 3D, IMRT and VMAT in preoperative rectal cancer. Dosimetric and radiobiological evaluation. *Vasiliki Softa*
- Benchmarking the AlignRT surface deformation module for the early detection and the quantification of oedema in breast cancer radiotherapy. *Veronica Sorgato*
- Implementation of a software platform for comprehensive quality assurance in radiotherapy. *Aristotelis Spyridonidis*

- Tolerance and action limits determination for tighter patient specific QA acceptance criteria and comparison of the clinical relevance of 2D versus 3D gamma passing rates. *Despoina Stasinou*
- Re-irradiation. Estimating NTCP when only the dDVHs for an OAR from the first and the second treatments are available. *Pavel Stavrev*
- A user friendly Matlab code for TCP/NTCP estimation in HDR brachytherapy. *Pavel Stavrev*
- Modeling prolonged SBRT for prostate cancer. *Nadejda Stavreva*
- Automatic planning process for glioblastoma VMAT irradiation. *Cinzia Talamonti*
- Radiomic and dosiomic profiling of paediatric medulloblastoma tumours treated with intensity modulated radiation therapy. *Cinzia Talamonti*
- Evaluation of fractionation schemes in breast cancer radiotherapy and dosimetric study of the main organs at risk. *Pedro Teles*
- Comparing treatment plans qualities at two different radiotherapy institutions operating under the same medical physics department. *Alessandro Tofani*
- Plan quality versus anatomic structure mutual disposition in moderate hypofractionated prostate radiotherapy. *Sara Trivellato*
- Plan quality in moderate hypofractionated prostate radiotherapy. A tool to facilitate and standardize plan quality and consistency. *Sara Trivellato*
- Radiomic features characterization in healthy and NSCLC tissues. *Valeria Trojani*
- GEANT4 simulation study of the feasibility of LINAC 4 (CERN) and Nuclotron (JINR) accelerators to provide beams suitable for investigation of FLASH therapy mechanism. *Ivan Tsanev*
- Dose optimisation of 2D X-ray image acquisition protocols in image-guided radiotherapy. *Marios Velonis*
- Implementation and clinical validation of an atlas based auto segmentation method of head and neck radiotherapy volumes of interest. *Luca Leandro Vigna*
- BELdART. Belgian dosimetry audits in radiotherapy. *Burak Yalvac*
- Sulfamic acid/EPR. A potential dosimetric system in radiotherapy field. *Fatna Zahiri*
- HyperArc treatment verification using 3D-printed anthropomorphic phantom and ionization chamber. *Lucia Zirone*
- Validation of a brain VMAT treatment through multi-detector dosimetry in an anthropomorphic phantom. *Emmanouil Zoros*
- Influence of using unflattened photon beams in VMAT prostate treatments. *Montserrat Colomer Truyols*

2 - Diagnostic and therapeutic nuclear medicine (NM)

- PET Bayesian penalized likelihood reconstruction algorithm. Application for target volume segmentation in the oropharyngeal district. *Cinzia Avigo*
- Acceptance test of a Cadmium-Zinc-Telluride dedicated cardiac gamma camera. *Claudia Bianchi*
- Hypoxia for head and neck cancer. Automatic FMISO segmentation using the parotid contour from radiotherapy planning. *Montserrat Carles*
- Image-based dosimetry for hepatic Y90 radioembolization. PET spatial resolution impact. *Nuria Carrasco-Vela*
- Characterization of the saturation behavior of two different gamma cameras for Holmium-166. *Rocío Estrada García*
- SPECT/CT calibration for patient dosimetry in radiometabolic therapy with ¹⁷⁷Lu-DOTATE. *Ornella Ferrando*
- Comparison of mathematical models for red marrow dosimetry in ¹³¹I treatment of thyroid cancer. *Giovanni Intermite*
- Decision and detection thresholds for quantitative evaluation of the labeled leukocytes scan. *Pavel Karhan*

- Implementation of SPECT auto-contouring detector motion in GATE Monte Carlo simulation for ¹⁷⁷Lu and ¹³¹I Molecular radiotherapy (MRT) dosimetry. *Gunjan Kayal*
- Normal range estimation for standard uptake values (SUV_{max}, SUV_{mean}) in liver SPECT/CT image of patients after administration of somatostatin analog ^{99m}Tc-HYNIC-Tyr³-octreotide (^{99m}Tc-Tektrotyd). *Sara Kurkowska*
- Optimization of digital mammography considering different glandularity. *Oscar Ariel Marti Villarreal*
- In vivo quantification of micro-balloon interventions (MBI) advantage. Retrospective study of SIRT vs. b-SIRT. *Marica Masi*
- Optimisation of attenuation & scatter correction in planar ^{99m}Tc- MAA imaging for improved accuracy in lung shunt fraction estimation. *Niamh McArdle*
- AIMN-SIE-AIFM and EANM pre-therapeutic dosimetry in the radioiodine treatment of hyperthyroidisms. A retrospective analysis of the differences. *Angelo Ostinelli*
- Amyloid PET: is there room for regional analysis? *Enrico Peira*
- Efficacy of Y90 resin microspheres treatments in patients affected by "large" HCC tumors. *Cinzia Pettinato*
- Impact of intensity discretization on radiomics analysis in ⁶⁸Ga-DOTATOC PET/CT for neuroendocrine tumor. *Oswaldo Rampado*
- Dosimetry in nuclear medicine for therapy optimization and exposure verification. The Italian survey. *Elisa Richetta*
- National survey of diagnostic reference levels for nuclear medicine in Lithuania. *Kirill Skovorodko*
- Modeling DNA damage induced by targeted radionuclide therapy. *Giulia Tamborino*
- PRRT in patients with neuroendocrine tumor. Preliminary results of OAR dosimetry and dose-response relationship for NET hepatic metastases. *Eugenia Tonini*

3 - Diagnostic and interventional radiology (DR)

- Identifying dynamic changes following traumatic brain injury using high resolution magnetic resonance images derived texture analysis. *Saleh Alanezi*
- Interventional radiologist experience effect on the radiation dose received by the patients during uterine artery embolization. *Salman Altimyat*
- Performance comparison of mammography systems with FFDM and DBT. An image quality study. *Simona Avramova*
- Optimizing the monitoring dose in contrast-enhanced CT. *Nesrine Ayari*
- Comparison between CT scanners with different Iterative Reconstruction techniques. *Alessandro Bellini*
- Impact of CT localizer and arm position to the patient's dose in neck CT scans. *Evelyn Bohrer*
- Transcranial magnetic resonance imaging-guided focused ultrasound treatment at 1.5 T. A retrospective study on treatment- and patient-related parameters obtained from 52 procedures. *Riccardo Filippo Borgese*
- Medical imaging in rural health centers and the challenge of Covid-19 patients. *Cari Borrás*
- Application and evaluation of the "linearity of the signal to noise ratio" parameter in quality assurance for Magnetic Resonance equipment. *Rossella Castiello*
- A Decade of Interventional Cardiology dose monitoring. Should there be a concern? *Vasileios Chatonidis*
- Synthetic 2D mammography. 4AFC experiment for image quality evaluation. *Margarita Chevalier*
- Post-thalamotomy neurofunctional findings on patients treated with trans-cranial magnetic resonance guided focused ultrasound surgery (tcMRgFUS). Preliminary results. *Giorgio Collura*
- Patient dose and image quality assessment during digital chest imaging at different KV. *Fabiola Cretti*

- Geometric accuracy and precision of Cone Beam CT system in angiography used for radiosurgery and neurosurgery planning. *Denise Curto*
- Tissue-equivalent trimodal anthropomorphic phantom for radiomic studies. *Daniela D'Ambrosio*
- Comparison of 10 skin dose mapping software products in interventional cardiology following a common protocol. results of the VERIDIC project. *Jérémie Dabin*
- Cumulative effective dose from multiphase CT scans in a single episode of care. *Andea Dalessio*
- Class of effective dose for mammography with tomosynthesis in compliance to the new Italian regulation. *Paolo De Marco*
- Comparison of two different indirect flat panels through their characterizations. *Marcel Frederico*
- Characterization of two CT systems using a Channelized Hotelling Observer and NPS metric. *Caterina Ghetti*
- Characterizing iron deposition in healthy and multiple sclerosis patients using susceptibility weighted imaging in MR. *Giorgia Guerra*
- Investigation of tissue equivalency of 3D printing materials used for fabrication of anthropomorphic phantoms. *Antonio Jreije*
- Automatic head CT image quality quantification with deep learning. Phantom study. *Mika Kortensniemi*
- Evaluation of the CDMAM phantom in the determination of the contrast-detail threshold thickness in a digital mammography system. *Lucía Lado Cacheiro*
- Breast density characterization through convolutional neural networks and first order statistical features. *Francesca Lizzi*
- Multicenter comparison of MR scanners for quantitative diffusion weighted imaging. Apparent Diffusion Coefficient dependence on acquisition plan and spatial position. Preliminary results. *Lorenzo Nicola Mazzoni*
- Evaluating the accuracy of Hounsfield Units in Interventional Radiology CBCT towards improved organ dosimetry estimation. *Nina McWilliams*
- Comparison between ultra-high (b1,600), high (b1,000) and standard (b500, b800) b-value diffusion weighted imaging in multi-parametric prostate cancer MRI. *Maria Michaliou*
- CT kernel for calcium quantification with arbitrary tube voltage. A phantom evaluation based on radiomic features. *Luca Moro*
- Split-filter Dual-Energy CT in the diagnosis of pulmonary embolism. A feasibility study. *Gaia Muti*
- MRI characterization of B-Lite® breast implants. *Giorgio Nissardi*
- Local dose reference value determination in digital breast tomosynthesis. *Ornella Ortenzia*
- A comprehensive approach to select CT tissue-equivalent 3D printable materials. *Francesco Padelli*
- Model observer: yes, we can! *Nicoletta Paruccini*
- Task-based filter optimization for a dual-energy breast CT system. *Juan Pautasso*
- Photon Counting as a valuable technology for breast screening. Low glandular doses and good image quality. *Massimiliano Porzio*
- Fully automated water equivalent diameter and SSDE computation for CT image in clinical workflow. *Massimiliano Porzio*
- Dose and image quality assessment for different chest examinations in paediatric patients with cystic fibrosis. A phantom study. *Veronica Rossetti*
- Pediatric X-ray radiation exposure. Prospective survey results in a large non pediatric hospital. *Raffaella Soavi*
- Evaluation of size-specific normalized doses for partially irradiated liver tissue in thorax MDCT examinations using modern MC techniques. *John Stratakis*
- Multicentre comparison of MR scanners (1.5T, 3T) for MR T1-T2 relaxometry. *Paolo Tortoli*

- Dose comparison in maxillofacial CT between 64 slices CT and 256 slices CT. *Giovanni Tosi*
- A new approach to routine qc of radiological equipment. *Ioannis Tsalafoutas*
- The evolution of quality control services for radiology equipment of Hamad Medical Corporation from 2005 to 2020. *Ioannis Tsalafoutas*
- Feasibility of bi-parametric MRI Delta-Radiomic features for assessing pathological complete response in locally advanced rectal cancer neoadjuvant chemoradiotherapy. *Alexandros Vamvakas*
- Radiation dose optimization for endomyocardial biopsies. *Claire Van Ngoc Ty*
- Cardiac angiographic protocols. A figure of merit approach. *Giovanna Venturi*
- How chest CT radiation dose of patients with confirmed COVID-19 will impact the cancer risk in the future. *Dafina Xhako*

4 - Radiation protection and dosimetry (RP)

- Development of a silicon-based thermal neutron system. *Mohammad Alsulimane*
- Operational evaluation of a new equipment for radiological protection in interventional cardiology. *Esther Angulo Pain*
- Evaluation of radiation exposure risk from 90Y in the light of Internal Bremsstrahlung emission. *Lucrezia Auditore*
- Fricke Dosimetry study for dose ranges used in radiotherapy. *Yolma Banguero*
- Collective effective dose from medical radiation exposures for the Tuscan population in 2016. *Eleonora Bortoli*
- Postal dosimetric audits using the TLD method in Poland. 2020 results. *Wojciech Bulski*
- Management of patients with implantable medical devices who are candidates for MRI examinations. *Federica Campanaro*
- Effectiveness of five radioprotective protective devices for staff in interventional procedures. Results of the MEDIRAD project. *Jérémie Dabin*
- Intraoperative uterine iliac artery embolization in planned caesarean for accreta placenta. Estimation of foetal radiation dose in a case report. *Adriano De Maggi*
- Setting up an Italian end-to-end dosimetric audit for IMRT and VMAT. The experience of the OPRORA project. *Sara Della Monaca*
- Evaluation of effectiveness of surgical drapes in interventional cardiovascular procedures. *Felipe Arturo Derecho Torres*
- Image quality parameters and DQE vs. average glandular dose in digital mammography. Can we improve patient safety without sacrificing image quality? *Magdalena Dobrzynska*
- Monte Carlo simulation of the large area PantherPix detector. *Denis Dudas*
- Medical staff dosimetry in interventional radiology and cardiology practices. EURADOS working group 12 recent studies. *Paolo Ferrari*
- Independent validation of Monte Carlo simulations within in-house dosimetry software. *Paul Gape*
- Superheated nanodroplets as an in-vivo range verification tool. Experimental verification by means of Monte Carlo simulations. *Andrea Giammanco*
- Non-uniformity error (noise) reduction of reflective type radiochromic films. *Toshizo Katsuda*
- Development of optical computed tomography system for polymer gel dosimetry. *Hiraku Kawamura*
- RF-EMF exposure levels in municipal waste collection service and ELF-EMF exposure levels at the electric railway system of Greece. *Yiannis Kiouvrekis*
- Unsupervised machine Learning and EMF radiation in schools. A study of 205 schools in Greece. *Yiannis Kiouvrekis*
- Effective finger dose for the staff performing in house production of 68Ga-PSMA and 68Ga-DOTATOC. *Efi Koutzouveli*

- Estimation of CBCT doses to target and healthy tissues during radiotherapy imaging. *Milana Marjanovic*
- The impact of contrast agent on radiation dose in conventional and dual-energy abdominal CT (DECT). *Mahta Mazloumi*
- Accredited dosimetry services. Importance of participating to inter-laboratory comparisons. *Francesco Rossi*
- Thermoluminescent dosimeter (TLD) for accurate dose measurement. A case study with tomotherapy. *Linhsia Noferini*
- Determining acceptance criteria for geometric accuracy of magnetic resonance imaging scanners used in radiotherapy planning. *Katri Nousiainen*
- A method for estimating a local dose in biological tissues after implantation of a positron flux. *Angelo Ostinelli*
- Computed tomography dose measurements using Gafchromic® XR-QA2 and EBT-3. *Martina Pace*
- Blood and red marrow dosimetry in 131-I therapy. Two different methods to evaluate in-blood residence time. *Martina Pace*
- Has covid-19 made the difference in the justification of the pediatric computed tomography exams? *Evangelia Papageorgiou*
- Estimating the need for eye dosimeters in interventional radiology. *Antti Pekkarinen*
- The role of table and mattress forward scattering in the evaluation of peak skin dose in fluoroscopy guided interventional procedures. *Elisa Pilloni*
- Effective and eye lens dose evaluation in fluoroscopic-guided procedures. *Serena Proietti Cignitti*
- Calibration of TLD-100 using LINAC, tomotherapy and HDR. *Mariagrazia Quattrocchi*
- Optimisation of paediatric chest x-rays in the Intensive Care Unit (ITU). A local study. *Caroline Renaud*
- Magnetic resonance thermometry implementation for safety assessment in ultra-high-field magnetic resonance imaging. *Alessandra Retico*
- Radioactive waste management in a general hospital with a nuclear medicine department with cyclotron. *Emanuele Roberto*
- Light dependent resistances as dosimeters in radiotherapy. Dose rate, energy and angular dependences. *Juan Román-Raya*
- Saba shielding. Composition primary radiation attenuation properties and dose reduction values during CT examinations. *Valiallah Saba*
- French diagnostic reference levels in radiology. Analysis of data collected over the period 2016-2018. *Julie Sage*
- Measurement of scattered radiation spectrum during X-ray fluoroscopy for the precise estimation of examiner's lens exposure. *Daisuke Shimao*
- Radiofrequency exposure measurements in Greece. *Vasiliki Softa*
- A dose management group project. *Giovanni Tosi*
- Conversion coefficients for estimation of effective dose from Kerma area product during X-ray radiography of pelvis and abdomen. *Ivan Tsanev*
- Contrast enhancement digital mammography dosimetry. Preliminary evaluation of dose increase in thick/dense breast. *Fabrizio Levrero*
- Radioactive medical waste management in a nuclear medicine unit with therapeutic and diagnostic administrations: optimization strategies. *Giovanna Venturi*
- Monitoring of the topology of the distribution of radon isotopes and their decay products near tectonic faults in Almaty, Kazakhstan. *Yuliya Zaripova*
- Femur surgery and clinical management of a patient hospitalized after 131 Iodine cancer radiometabolic therapy: safety precautions and dosimetry evaluations for healthcare personnel. *Felicia Zito*

5 - Biomedical engineering (BE)

- MRgFUS System. A novel phantom for temperature evaluation during sonication. *Giuseppe Acri*
- An approach for creation of a contrast-enhanced phantom for breast imaging. *Kristina Bliznakova*
- Characterization of an MRI phantom for relaxation times maps harmonization and optimization. *Davide Cicolari*
- Positron annihilation spectroscopy for fundamental studies of living cells. *Paola Folegati*
- Feasibility study of using iodine-based mixtures in the production of anthropomorphic breast phantom. *Tihomir Georgiev*
- Temporal electrical conductivity mapping during temperature Increase using bSSFP. *Jessica A. Martinez*
- IoT phonometer prototype. *Luciano Mondini*
- Application of the finite element method for modeling of the esophagus function. *Dimitrios Samaras*
- Three-dimensional and mesoscopic scale fine structures of human upper abdominal organs revealed by micro refraction-contrast X-ray CT. *Daisuke Shimao*
- Thermo radiotherapy treatment of superficial sarcoma. Experimental 3D field assessment of HT antenna applicator. *Antonella Soriani*
- Heating of metallic implants in MRI. The European project MIMAS. *Luca Zilberti*

6 - Informatics (IT)

- Updating S-IBEX compliancy to IBSI. *Andrea Bettinelli*
- Skull extraction for analysis of brain damage in magnetic resonance imaging. *Marcela de Oliveira*
- Deep learning based HPV status prediction on CT-images. *Daniel Lang*
- WISDoM: a framework for the analysis of wishart distributed matrices for neuroinformatics. *Carlo Mengucci*
- MONTY CARLO: a particle transport simulation code in Python. *Teles Pedro*
- Robustness analysis of radiomic features extracted from CT images of lung nodules in lesion segmentation and image acquisition parameters variability. *Gaetano Vitagliano*

7 - Professional issues (PR)

- Measurement of time varying magnetic fields gradient using pocket dosimeters. *Giuseppe Acri*
- Cath labs GEMBA walk findings. Are we still not there yet? *Andreea Dohatcu*
- A survey based comparison between clinical training pathways of Irish MPEs and the RP174 "European Guidelines on Medical Physics Expert". *Margaret Moore*

8 - Education and training (ET)

- The Role of the Medical Physicist in Clinical Trials. *Natalie Abbott*
- Use of a RDIM software for automatic transmission of the exposure data in the radiological report in compliance with the Italian transposition of the 2013/59/EURATOM directive. *Paola Enrica Colombo*
- Course and participant assessment using online based clicker software. *Jens Edmund*
- Training for the future: 8 years of Master of Advanced Studies in Medical Physics in Trieste. *Renata Longo*
- An EBAMP accredited Python data analysis course for medical physicists. *Eric Pace*
- ENEN+ project-attract, retain and develop new nuclear talents beyond academic curricula. *Csilla Pesznyak*



INDEX

Satellite Symposia

LIVE ROOM PIEMONTE

Thursday 17 June 2021 • *Sponsored by Emme Esse M.S.*

- 12:55 Implementation of a Radiation Dose Index Monitoring (RDIM) system, ... what does it mean? Problems and solutions from PHYSICO's real experiences.
Elisa Mattavelli, Alessio Moscato, Andrea Ribolzi

Friday 18 June 2021 • *Sponsored by Sun Nuclear*

- 12:55 Improving Patient Safety - Advances in RT Quality Assurance.
- Implementation of SunCHECK QA Platform in a Medium size Department. *Nuria Jornet*
 - Using a High-Density Diode array for SRS/SABR Commissioning. *Peter Filatov*

Friday 18 June 2021 • *Sponsored by Mevion*

Moderator: Vincent Tallier

- 13:25 Initial Experience Establishing a Compact Proton Therapy Facility: from idea to implementation. *Geert Bosmans*

Saturday 19 June 2021 • *Sponsored by Radius*

- 12:55 Radiomics applications to MRIdian MR images: state of art and future perspective. *Davide Cusumano*
View Ray/Visibly Better. *Mike Saracen*

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Thursday 17 June 2021 • *Sponsored by Elekta*

- 13:25 QA solutions. *Young Lee*

Friday 18 June 2021 • *Sponsored by Else*

- 12:55 Introduction to AI applications in prostate MRI. *Rafael Lopez*

Friday 18 June 2021 • *Sponsored by C-Rad*

- 13:25 Markerless. Accuracy & Precision in Radiotherapy. *Felipe de Moura*

Saturday 19 June 2021 • *Sponsored by GE*

- 12:55 The new GE paradigm in image quality. *Luca Giulio [Moderator]*
- Deep Learning in MRI image reconstruction- AIR Recon DL. *Paolo De Felice*
 - ScAI & deep learning in image reconstruction, ground truth choice in CT. *Fabiano Caprotti*

Saturday 19 June 2021 • *Sponsored by Varian*

- 13:25 The Evolution of Treatment Planning: a clinical perspective. *Yvette Wilbur*

INDEX

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