

MEDICAL PHYSICS IN THE BALTIC STATES

15TH CONFERENCE & WORKSHOP PROGRAM (TENTATIVE)

Friday, November 5, 2021

8.30-9.00 Registration of participants at **Kaunas University of Technology, Santaka Valley, K. Baršausko str. 59–I and II halls, Kaunas**

9.00-9.15 Conference opening: **Eugenijus Valatka**, Rector of Kaunas University of Technology, **Bronė Narkevičienė**, Dean of the Faculty of Mathematics and Natural Sciences, **Diana Adlienė**, Kaunas University of Technology, Physics Department


9.15-9.30 EFOMP Welcome address: **Paddy Gilligan**, President of EFOMP. "EFOMP ACTIONS IN MEDICAL PHYSICS"

Session 1. Chair: prof. dr. Diana Adlienė

9.30-10.00 **Sören Mattsson**. REFLECTIONS ON 60 YEARS OF DEVELOPMENT IN MEDICAL PHYSICS AND THOUGHTS ABOUT THE FUTURE.

10.00-10.30 **Carmel J. Caruana**. DEVELOPING STRATEGIC LEADERSHIP SKILLS IS CRUCIAL FOR THE FUTURE OF MEDICAL PHYSICS.

10.30-11.00 **Efi Koutsouveli**. EDUCATIONAL CHALLENGES AND OPPORTUNITIES DURING AND POST COVID ERA.

Coffee break 11:00-11.15 

Session 2. Chair: dr. Christian Bernhardsson

11.15-11.30 **Polina S. Druzhinina, Larisa A. Chipiga, Aleksandr V. Vodovatov, Aleksandr V. Pozdnyakov, Yulia N. Kapyrina, Dmitry O. Ivanov, Yury V. Petrenko and Viktor G. Puzyrev**. THE ADJUSTED EFFECTIVE DOSE ASSESSMENT FROM CT OF THE CHEST FOR PEDIATRIC PATIENTS: A HOSPITAL BASED STUDY.

11.30-11.45 **Aleksandr Vodovatov, Romanovich Ivan, Ryzhov Sergey, Chipiga Larisa, Berkovich Gleb and Biblin Artem**. ASSESSMENT OF CHANGES IN STRUCTURE OF X-RAY DIAGNOSTICS AND COLLECTIVE DOSE FROM CT EXAMINATIONS RELATED TO COVID-19 IN THE RUSSIAN FEDERATION IN 2020.

11.45-12.00 **Leonid Repin, Rustam Akhmatdinov and Artem Biblin**. APPLICATION OF SUMMARY MEASURES OF POPULATION HEALTH TO RADIATION RISKS ASSESSMENT.

12.00-12.15 **Kirill Skovorodko, Mažena Maciusovič, Marius Burkanas, Sigitas Tiškevičius, Laurynas Gilys, Renata Komiagienė and Jonas Venius**. TOWARDS HARMONIZATION OF CLINICAL BONE SCINTIGRAPHY PROTOCOL BETWEEN THREE DIFFERENT SPECT/CT SYSTEMS IN LITHUANIA.

12.15-12.30 **Richard Deyhle Jr, Christian Bernhardsson, Lovisa Waldner, Lars E. Olsson and Marie Sydoff**. DOSIMETRY CONCEPTS FOR QUALITY ASSURANCE IN μ CT


12.30-12.45 **Artem Davydov, Kononenko Dmitry, Artem Biblin and Alexander Vodovatov**. PERCEPTION OF MEDICAL RISKS AND SOCIODEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS.

- 12.45-12.55 Tatjana Vigovska, Katrina Caikovska and Mara Epermane. ESTIMATION METHOD OF BREAST ABSORBED RADIATION DOSE DURING CORONARY ANGIOGRAPHY
- 12.55-13.05 Leonid Krynke, Birutė Gricienė, Antonio Jreije and Laura Bilotaitė. RADIATION DOSE FOLLOW-UP FOR COMMON INTERVENTIONAL CARDIOLOGY AND RADIOLOGY PROCEDURES.
- 13.05-13.15 Iliia Shatskiy, Dmitry Ivanov, Vitaly Reznik, Aleksandr Pozdnyakov, Viktor Puzyrev, Yuliya Kapryrina, Anna Nabieva, Karine Panuntseva, Svetlana Bannova and Yury Petrenko. RELATION BETWEEN THE SEVERITY OF THE COURSE OF THE DISEASE AND DOSES AND RADIATION RISK OF THE CHEST X-RAY AND CT EXAMINATION OF CHILDREN WITH COVID-19.
- 13.15-13.30 Lars G Lilja. SURFACE GUIDING - BECOMING STANDARD OF CARE IN RADIOTHERAPY?

Time for the lunch 13:30 – 14:30 

Session 3. Chair: dr. Jurgita Laurikaitienė

- 14.30-14.40 Aurimas Krauleidis and Vanda Andrijaitienė. GAMMA SPECTROSCOPIC ANALYSIS OF 18 MeV PHOTONS ACTIVATED RADIOISOTOPES IN SIEMENS ONCOR IMPRESSION 3D LINAC HEAD AND ITS DECOMMISSIONING EXPERIENCE.
- 14.40-14.50 Sumeyra Can, Didem Karacetin and Niyazi Meric. A NEW MONTE CARLO ALGORITHM TO SIMULATE VIRTUAL SOURCE MODEL ON AN ELEKTA VERSAHD LINAC.
- 14.50-15.05 Marijus Astrauskas, Romualdas Griškevičius, Kęstutis Akelaitis, Ieva Markevičienė and Jonas Venius. CASE STUDY REPORT: ADVANTAGES OF HyperArc™ IN BRAIN RADIOSURGERY TREATMENT PLANNING.
- 15.05-15.15 Nur Kodaloglu, Cafer Atar and Selami Karahan. A SUCCESSFUL PATIENT MANAGEMENT SYSTEM DURING COVID-19 PANDEMIC AND THE IMPACT OF THE RESTRICTIONS IN A RADIATION ONCOLOGY CLINIC IN TURKEY.
- 15.15-15.30 Linas Kudrevičius, Evelina Jaselskė, Diana Adlienė. RADIOSURGERY DOSE OPTIMIZATION FOR THE PATIENTS WITH CEREBRAL ARTERIOVENOUS MALFORMATIONS AFTER ENDOVASCULAR EMBOLIZATION.
- 15.30-15.40 Dinesh Kumar, Subhas Haldar, Arvind Kumar, Abu Golam Zakaria and Amol Jagtap. ASSESSMENT OF TREATMENT PLAN QUALITY BETWEEN FLATTENING FILTER AND FLATTENING FILTER FREE PHOTON BEAM FOR CARCINOMA OF ESOPHAGUS WITH IMRT TECHNIQUE.
- 15.40-15.55 Romualdas Griškevičius, Rita Steponavičienė, Marijus Astrauskas, Kęstutis Akelaitis, Ieva Markevičienė and Jonas Venius. COMPARING TCP AND NTCP IN LUNG SBRT USING DIFFERENT DOSE CALCULATION MODELS.
- 15.55-16.05 Liudmyla Aslamova. INCREASING THE ANTITUMOR EFFICACY OF DOXORUBICIN BY HIGH-ENERGY IRRADIATION OF SALINE.
- 16.05-16.20 Ramune Ulrich. EXTENDING LAP PRODUCT PORTFOLIO: SOLUTIONS FOR PATIENT QA AND MACHINE QA.

Coffee break 16.20-16:35 

Session 4. Chair: dr. Nur Kodaloglu

- 16.35-16.45 *Džiugilė Valiukevičiūtė, Judita Puišo, Jurgita Laurikaitienė and Linas Kudrevičius.* FORMATION AND INVESTIGATION OF Cu/CuO_x NANCOMPOMCOSITE FILMS FOR LOW DOSE DOSIMETRY APPLICATION.
- 16.45-16.55 *Neringa Šeperienė and Ignas Pikas.* DEVELOPMENT OF POLYMER GEL BASED EXHALED BREATH BIOMARKERS DETECTION SENSOR FOR COVID-19 MONITORING.
- 16.55-17.10 *Birute Gričienė, Kristina Kristinaitė, Milda Bareikė, Leonid Krynke and Aušra Bilotienė Motiejuniene.* A PYTHON-BASED TOOL FOR PATIENT CT DOSE TRACKING AND ANALYSIS.
- 17.10-17.20 *Vijayanand Sivakumar and Diana Adlienė.* DEVELOPMENT OF PATIENT'S BIOMETRIC DATA BASED CT DOSE OPTIMIZATION ALGORITHM.
- 17.20-17.35 *Christian Bernhardsson, Lovisa Waldner, Christopher Rääf and Aleksandr Vodovatov.* HOUSEHOLD SALT (NaCl) FOR OPTICALLY STIMULATED LUMINESCENCE DOSIMETRY: AN OVERVIEW.
- 17.35-17.50 *Konstantinos Dalianis, Konstantinos Gogos, Efi Koutsouveli, George Kollias and Vasileios Prasopoulos.* DOSIMETRIC EVALUATION TO MEDICAL WORKERS OPERATING IN A PET/CT DEPARTMENT AFTER THE USE OF DYNAMIC TECHNIQUES.
- 17.50-18.00 *Vytenis Barkauskas, Lukas Rimkus, Jonas Reklaitis, Artūras Plukis and Mikas Vengris.* EVALUATION OF THE IRRADIATION DOSES FROM THE OPERATION OF THE INTENSE FEMTOSECOND LASER.

19:30-22:00 Get-together party (Hotel Kaunas Victoria)


Saturday, November 6, 2021

- 8.30-9.00 Registration of participants at **Kaunas University of Technology, Santaka Valley, K. Baršausko str. 59–I and II halls, Kaunas**

Session 5. Chair: dr. Kristina Eriksson Stenström

- 9.00-9.15 *Artem Davydov, Artem Biblin, Alexander Vodovatov and Vladimir Safronov.* PERCEPTIONS OF THE RISKS OF RADIODIAGNOSTIC EXAMINATIONS IN POTENTIALLY HIGH-DOSE AND LOW-DOSE PATIENTS.
- 9.15-9.30 *Svetlana Sarycheva and Zumrud Vagidova.* PREDICTION OF DETERMINISTIC SKIN EFFECTS IN PATIENTS UNDERGOING HIGH-DOSES INTERVENTIONAL RADIOLOGY EXAMINATIONS.
- 9.30-9.45 *Konstantinos Dalianis, Konstantinos Gogos, George Kollias and Vassileios Prassopoulos.* EFFECTIVE DOSE OF FOR MEDICAL WORKERS OPERATING IN A PET/CT.
- 9.45-10.00 *Jehangir Khan, Tobias Rydén, Noushik Manuel, Martijn Van Essen, Johanna Svensson and Peter Bernhardt.* EVALUATION OF THE KIDNEY ABSORBED DOSE ESTIMATE FOR REDUCED SPECT ACQUISITION TIME IN ¹⁷⁷Lu-DOTATAT TREATMENTS.
- 10.00-10.15 *Yulia Dvornik, Natalia Veyalkina and Kseniya Fabusheva.* EARLY EFFECTS OF RADIATION EXPOSURE ON PERIPHERAL BLOOD CELLS AND NORMAL ORGANS OF MICE.
- 10.15-10.30 *Antonio Jreije, Kirill Skovorodko, Mykolas Pavlauskas, Roman Machnin, Diana Adlienė and Birutė Gričienė.* OPTIMIZATION OF CONVENTIONAL X-RAY IMAGE ACQUISITION PARAMETERS FOR PELVIC PROCEDURES: A PHANTOM STUDY.

- 10.30-10.45 Larisa Chipiga, Aleksandr Vodovatov, Polina Piven, Gleb Berkovich Gennadiy Trufanov, Irina Maschenko, Polina Druzhinina and Viktor Puzyrev. FETAL DOSES FOR PREGNANT PATIENTS UNDERGOING CHEST CT EXAMINATIONS.
- 10.45-11.00 Inga Andriulevičiūtė, Kirill Skovorodko, Jurgita Laurikaitienė and Birutė Gricienė. ASSESSMENT OF EXTREMITY EXPOSURE FOR NUCLEAR MEDICINE PERSONNEL.
- 11.00-11.15 Mikhail Osipov, Andrey Vazhenin, Daria Vazhenina, Tatyana Novikova, Anna Kuznetsova, Irina Aksenova and Mikhail Sokolnikov. PET-CT AND OCCUPATIONAL EXPOSURE: COHORT PROFILE UPDATE.
- 11.15-11.25 Giedrė Morkūnaitė, Rimantas Ožiušas and Vytautas Čeplauskas. COLOR CHANGES OF DENTAL CERAMICS EXPOSED TO BLEACHING MATERIALS.
- 11.25-11.40 Vladislav Golikov. ASSESSMENT OF THE RADIATION RISKS FROM MEDICAL X-RAY EXAMINATIONS CONSIDERING AGE AND GENDER COMPOSITION OF THE PATIENTS.

Coffee break 11:40 -11.55 

Session 6. Chair: dr. Judita Puišo

- 11.55-12.10 Rita Plukienė, Artūras Plukis, Andrius Puzas, Rasa Gvozdaitė, Vytenis Barkauskas, Grigorijus Duškesas, James V. Cizdziel, Derek Bussan and Vidmantas Remeikis. ACTINIDE DOSE IN THE IRRADIATED RBMK-1500 REACTOR GRAPHITE.
- 12.10-12.25 Kristina Eriksson Stenström, Vytenis Barkauskas, Christian Bernhardsson, Aliaksandr Dvornik, Mattias Jönsson, Charlotta Nilsson, Mattias Olsson, Guillaume Pédehontaa-Hiaa, Valery Ramzaev, Christopher Rääf and Aleksandr Vodovatov. PREOPERATIONAL ASSESSMENT OF ¹⁴C IN THE VICINITY OF THE BELARUSIAN NUCLEAR POWER PLANT.
- 12.25-12.40 Aliaksandr Dvornik and Veronika Sehlin. ACCUMULATION OF ¹³⁷Cs BY FOREST LICHENS IN THE CHERNOBYL AFFECTED TERRITORIES.
- 12.40-12.55 Andrius Puzas, Marina Konstantinova, Rūta Druteikienė, Rasa Gvozdaitė, Nikolaj Tarasiuk and Vidmantas Remeikis. PLUTONIUM ISOTOPIC COMPOSITION ANALYSIS - AS AN IMPORTANT AND RELIABLE TOOL FOR THE DETERMINATION OF THE ARTIFICIAL RADIONUCLIDE SOURCE.
- 12.55-13.10 Guillaume Pédehontaa-Hiaa, Christian Bernhardsson, Vytenis Barkauskas, Kristina Eriksson Stenström, Christopher Rääf, Sören Mattson and Andrius Puzas. EVALUATION OF THE REGION-SPECIFIC RISKS OF ACCIDENTAL RADIOACTIVE RELEASES FROM THE EUROPEAN SPALLATION SOURCE.

ePoster Session 7. Chair: dr. Benas Gabrielis Urbonavičius

- 13.10-13.15 Nur Kodaloglu, Can Azak, Sezai Guclu Kilicoglu, Tugba Ulu, Gizem Kavak Eren, Hasan Camlicali and Ebru Karakaya. BACK TO THE FUTURE: THE POSITIVE EDUCATIONAL IMPACT OF COVID-19 PANDEMIC WITH ONLINE LEARNING PROGRAM INTO CLINIC.
- 13.15-13.20 Aurimas Plaga, Ignas Pikas, Judita Puišo, Jurgita Laurikaitienė and Diana Adlienė. IONIZING RADIATION INDUCED COLOUR CHANGES IN HYDROGELS.
- 13.20-13.25 Agnė Giedrytė, Lamiaa Abdelrazik, Marius Laurikaitis, Reda Čerapaitė-Trušinskienė and Jurgita Laurikaitienė. PHANTOM-BASED QUALITY CONTROL MEASUREMENTS FOR THE NEWLY INSTALLED LINEAR ACCELERATOR HALCYON.

- 13.25-13.30 Mindaugas Ilickas and Jurgita Laurikaitienė. MEDICAL 3D IMAGE SEGMENTATION IN RADIOTHERAPY TREATMENT FOR A PATIENT WITH HEAD AND NECK TUMOURS.
- 13.30-13.35 Aleksandras Ševčik and Diana Adlienė. COMPARISON OF EXPERIMENTALLY MEASURED DOSE DEPTH DISTRIBUTIONS WITH MC SIMULATIONS IN ELECTRON-IRRADIATED DOSE GELS.
- 13.35-13.40 Lijana Lileikyte and Benas Gabrielis Urbonavicius. TLD-100 RESPONSE DEPENDENCE ON VARIOUS FACTORS.
- 13.40-13.45 Mantas Brukštus and Diana Adlienė. METALLIC ARTIFACTS AND THEIR REDUCTION IN NUCLEAR MAGNETIC RESONANCE IMAGING (AN OVERVIEW).
- 13.45-13.50 Nur Kodaloglu. IS IT POSSIBLE TO APPLY A NEW TECHNIQUE WITH AN OLD LINAC? A FEASIBILITY STUDY OF PLDR WITH ELEKTA SYNERGY PLATFORM LINAC.
- 13.50-13.55 Justas Beresnevičius and Benas Gabrielis Urbonavičius. PROTOTYPE OF CONTEMPORARY GAMMA SPECTROMETER BASED ON OBSOLETE RADIOMETER.
- 13.55-14.00 Mantvydas Merkis, Ignas Pikas and Diana Adliene. INVESTIGATION OF LOW TOXICITY DOSE GELS WITH ENHANCED SENSITIVITY.
- 14.00-14.05 Greta Vainiūtė, Laurynas Gilys and Diana Adlienė. INVESTIGATION OF EXPOSURE DOSES TO NUCLEAR MEDICINE STAFF WORKING WITH Tc-99m.
- 14.05-14.10 Mindaugas Džiugelis and Leonid Krynke. DIAGNOSTIC AND CLINICAL GRADE MEDICAL IMAGING DISPLAY PERFORMANCE EVALUATION AND OPTIMIZATION USING QUALITY ASSURANCE PROTOCOLS.
- 14.10-14.15 Kamilė Dambrauskaitė, Jurgita Laurikaitienė and Artūras Andrejaitis. APPLICATION OF 3D PRINTED INDIVIDUAL COMPENSATING BOLUS FOR THE VERIFICATION OF SHALLOW HEAD AND NECK CANCER TREATMENT.
- 14.15-14.20 Todorka L. Dimitrova. MASTER'S PROGRAM IN MEDICAL PHYSICS IN ENGLISH.
- 14.20-14.25 Sridhar Hariharaputran, Arul Murugan Natarajan, Kestutis Aidas, Yaoquan Tu, Zilvinas Rinkevicius and Patrick Norman. MULTISCALE MODELLING AND ANALYSIS OF FLUORESCEIN TAGGED VANCOMYCIN IN A HETEROGENEOUS ENVIRONMENT.
- 14.25-15.05 **Final remarks**