

**MEDICAL PHYSICS IN THE BALTIC STATES
13TH CONFERENCE & WORKSHOP PROGRAM**

Thursday, 9 November 2017

WORKSHOP: Possibilities and Innovations in External Radiotherapy

**Hosting institution: Republican Šiauliai Hospital, Radiotherapy Department,
Darželio str. 10, Šiauliai**

13.30-14.00 Registration of participants at Republican Šiauliai Hospital, Radiotherapy Department, Darželio str. 10, Šiauliai

14.00-14.15 Welcome to the Republican Šiauliai Hospital, Radiotherapy Department

14.15-14.30 **Karolis Jakštas, Genadij Aleksejenko** (Republican Šiauliai Hospital, Radiotherapy Department). New trends and improvements in Radiotherapy department in Republican Šiauliai Hospital.

14.30-15.00 **Lars G Lilja** (C-RAD Positioning AB) Catalyst HD – Surface Tracking System for Positioning, Motion control and Gating.

15.00-15.15 **Romas Vilkas, Rasa Dagienė** (Klaipėda University Hospital) Brachytherapy in Klaipėda University Hospital.

15.15-15.30 **Jurita Laurikaitienė, Trifon Tzirkalov, Todorka Dimitrova, Marius Laurikaitis**. Evaluation of skin dose under bolus for post-operative breast cancer treatment.

15.30-16.00 **Ramune Ulrich** (LAP GmbH Laser) News in LAP product portfolio: easy water family phantoms for QA in radiotherapy

16.00-16.30 Visit to the Radiotherapy Department (Head of department **Jonas Gečas**)

Coffee break 16:30-17.00

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Friday, 10 November 2017

8.30-9.30 Registration of participants at **Kaunas University of Technology, Studentų str. 50–325F, Kaunas**

9.30-9.45 Conference opening: **Giedrius Laukaitis**, Head of Physics Department, **Sören Mattsson**, Lund University, **Skåne University Hospital Malmö**, **Diana Adlienė**, Kaunas University of Technology

9.45-10.00 **Judita Puišo**. Department of Physics: 95 years with the University of Lithuania

Session 1. Chair: prof. Diana Adlienė

10.00-10.30 **Sören Mattsson**. ICRP project "Radiological protection in therapy with radiopharmaceuticals".

10.30-10.45 **Rūta Užupytė, Evelina Visockaitė, Tomas Krilavičius**. Investigation of relation between internal-external markers for respiratory motion compensation in radiotherapy.

10.45-11.00 **Romualdas Griskevicius, Rita Steponaviciene, Saulius Cicenias, Jonas Venius**. Sparing of perfusion active regions during lung radiotherapy can improve patients quality of life.

11.00-11.15 **Bhargesh K. Shukla, Katharina Spindeldreier, Christian P. Karger, Steffen Greilich, Asja Pfaffenberger**. Magnetic field influence on the response of the Exradin A1SLMR ionization chamber.

11.15-11.45 **Lars G Lilja** (C-RAD Positioning AB) Catalyst HD – Surface Tracking System for Positioning, Motion control and Gating.

Coffee break 11:45-12:00

Session 2. Chair: prof. Sören Mattsson

12.00-12.15 **Martin Andersson, Lars Herrnsdorf, Sören Mattsson**. IDAC-CAD2VOX - a software for radiation protection calculations for the ICRP reference phantoms which are in an environment described by detailed CAD drawings.

12.15-12.30 **Aleksandras Ševčik, Diana Adlienė**. Monte Carlo simulated dose distribution in a human voxel phantom from diagnostic X-ray with visualisation.

12.30-12.45 **Linas Kudrevičius, Andrius Radžiūnas**. **Technical overview of gamma knife radiosurgery.**

12.45-13.15 **Ramune Ulrich**. News in LAP product portfolio: easy water family phantoms for QA in radiotherapy

Time for the lunch 13:15 – 14:15

Session 3. Chair: Kalle Kepler

- 14.15-14.30** *Larisa Chipiga, Aleksandr Vodovatov, Irina Zvonova, Christian Bernhardsson.* Assessment of patient doses and possible approaches for implementation of optimization procedures in PET/CT examinations in the Russian Federation.
- 14.30-14.45** *Iliia Shatskii,* Use of organ dose approach versus effective dose approach in risk assessment for the common radiographic X-ray examinations of children.
- 14.45-15.00** *Aleksandr Vodovatov, Vladislav Golikov, Irina Kamyshanskaja, Vladimir Cheremysin, Kseniya Yanina, Christian Bernhardsson.* Estimation of effective doses for barium meal fluoroscopic examinations.
- 15.00-15.15** *Marijus Astrauskas, Marius Burkanas, Arijanda Neverauskienė, Jonas Venius.* Optimisation of low dose computed tomography protocol for diagnostics of developmental dysplasia of the hip using a phantom based noise simulation approach.
- 15.15-15.30** *Alvar Aasna, Mait Nigul, Kalle Kepler.* Adaptation of ECG-gated non-contrast enhanced magnetic resonance angiography trigger delay technique for patients with high heart rate.
- 15.30-15.45** *Sofie Ceberg, Diana Adliene and Sören Mattsson.* 3D polymer gel dosimetry for quality assurance in radiation therapy.
- 15.45-16.00** *Kristina Kristinaitytė, Jonas Ražanskas, Vaida Paketurytė, Nomeda R.Valevičienė, Vytautas Balevičius.* Methods of Sample Preparation for Analysis and Quality Assurance of Prostate MR Spectroscopy.

Coffee break 16:00-16:15

Session 4. Chair: Aleksandr Vodovatov

- 16.15-16.30** *Judita Puišo, Matas Damonskis, David Lopes.* Photon induced synthesis of silver nanoparticles.
- 16.30-16.45** *Oskars Vilitis, Dmitrijs Merkulovs, Vladimirs Kozlovs.* Measurement of low concentration of nanosized objects in bioliquids by means of refractometric methods
- 16.45-17.00** *Tadas Didvalis, Paulius Ruzgys, Saulius Šatkauskas, Diana Adlienė, Saulius Mickevičius.* Cell viability, DNA damage and relative mitotic arrest dependance on ionising radiation dose.
- 17.00-17.15** *Miglė Staliulionytė, Paulius Ruzgys, Darius Germanas, Saulius Mickevičius.* Evaluation of low-dose neutron irradiation impact on CHO cells
- 17.15-17.30** *Akvilė Andziukevičiūtė-Jankūnienė, Daiva Mikučionienė, Virginija Jankauskaitė.* Development of complex hypertrophic scars treatment.
- 17.30-17.45** *Florentina Sederavičiūtė, Jurgita Domskienė, Judita Puišo, Viktorija Vaitkevičienė.* Influence of drying temperature on mechanical properties of bacterial cellulose.

19:00 -22:00 Get-together party

**EUROPA ROYALE HOTEL KAUNAS,
Miško g. 11, Kaunas**

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Saturday, 11 November 2017

9.30 -10.00 Registration of participants at Kaunas University of Technology, Studentų str.50-325F, Kaunas.

Session 5. Chair: Ilia Shatskii

- 10.00-10.15 *Varmo Ernits, Kalle Kepler, Anatoli Vladimirov.* Quantitative quality control measurements of a diagnostic digital x-ray image detector.
- 10.15-10.30 *Kirill Skovorodko, Birute Gričienė, Milda Petkelytė.* Comparison of personnel radiation monitoring dosimeters designed for medical field.
- 10.30-10.45 *Christian Bernhardsson, Lovisa Waldner, Aleksandr Vodovatov.* Advancements in prospective dosimetry with NaCl read-out by Optically Stimulated Luminescence.
- 10.45-11.00 *Benas Gabrielis Urbonavičius.* Surface plasmon resonance based dosemeter for fixed geometry measurements *in situ*
- 11.00-11.15 *Evelina Jaselskė, Diana Adlienė, Viktoras Rudžianskas, Erika Korobeinikova.* Dosimetric characteristics of 3D printed materials

Coffee break 11:15 -11:45

- POSTERS: *Kęstutis Akelaitis, Violeta Nevulis-Obuchovska, Jonas Venius.* Interstitial brachytherapy for cervical cancer - a way to better target dose coverage.
- Virgilijus Minialga, Robertas Samavičius.* Modelling of diamagnetic levitation control of pyrolytic graphite.
- Justė Lazauskaitė, Arvydas Kanapickas.* Extremely low frequency electric and magnetic fields in passenger cars.
- Viktorija Juškaitė.* ICT use in the carers' work: technostress.

Session 6. Chair: Larisa Chipiga

- 11.45-12.00. *Donatas Opulskis, Evelina Jaselskė, Tadas Didvalis.* Evaluation of overlapping doses for gynaecologic cancer patients using semiconductor diodes.
- 12.00-12.15 *Severina Paukštytė, Benas Gabrielis Urbonavičius.* TLD dose response in different radiation beam qualities.
- 12.15-12.30 *Diana Adlienė.* Recognition of medical physicists as health professionals in Lithuania
- 12.30-13.00 *Sören Mattsson.* Fresh impressions from Fukushima, Asia-Oceania Nuclear medicine in Yokohama and National Institute of Radiological Sciences in Chiba.
- 13.00-13.15 Final remarks: prof. Sören Mattsson