Monday (25 April 2022)

IM 2022 & NEUDOS 14

Welcome

Keynote lecture:
W. Ruhm "*The European Radiation Dosimetry Group – A 40 Year Success Story*"

Session 1: International and European standards and recommendations (09:50 - 10:30)

Invited: V. Chumak "Individual monitoring of the public after radiological emergency: evolution over the last three decades"

M. Hajek "*Experiences in Transitioning a Testing Laboratory to the New ISO/IEC 17025:2017 Standard*"

R. Behrens "*Revision of the series ISO 6980: reference beta-particle radiation*"

Coffee break (10:30 - 11:00)

Session 2: Micro- and nano-dosimetry 1 (14:00 - 15:30)

Invited: A. Parisi "*Microdosimetric modeling of radiation-induced effects in detectors and living organisms: what can these two worlds learn from each other?*"

L. Tran "*Verification of microdosimetric biological weighting function for the RBE10 modelling in particle therapy using solid state microdosimeter*"

Ch. La Tessa "*A novel hybrid approach for radiation field characterization: from detector development to biological damage modelization*"

A. Selva "*Correlations between energy imparted and ionization yield at the nanometre scale*"

R. Singh "*A comprehensive Monte Carlo simulation of the neutron response of multi-element microdosimetric detectors based on thick gas electron multiplier*"

S. Barna "*Microdosimetry with a tissue-equivalent proportional counter at the MedAustron light ion beam therapy facility*"

A. Bianchi "*Microdosimetry of a 148 MeV modulated proton beam with a new mini-TEPC*"

V. Conte "*New highlights on nanodosimetry*"

Lunch break (13:00 - 14:00)

Session 3: Physics-biology interface (11:00 - 12:30)

Invited: A. Attili "*The usage of dose averaged LET versus full spectrum in the prediction of the RBE in proton therapy*"

M. Mietelska "*The physical model for selected nanodosimetric quantities consistent with radiobiology*"

F. Mathew "*Using single-cell DNA sequencing as a dosimetric tool- An exploratory study*"

L. Grzanka "*Deciphering beam quality descriptors for proton fields: yd and LETd simulations compared to microdosimetric experiments*"

J. Kildea "The Neutron-Induced Carcinogenic Effects Research Program"

F. G. Cordoni "*The Generalized Stochastic Microdosimetric Model, GSM2: a full spatio-temporal stochastic description of particle beams to predict biological effects in a broad dose rate range*"

Coffee break (15:30 - 16:00)

Session 4: Individual Monitoring in Medical Applications (16:00 - 17:30)

Invited: A. Szumska "*An analysis of occupational doses in the proton therapy center in Poland in 5 years of practice*"

G. Garcia-Fernandez "*Commissioning of the operational radiation protection in Compact Proton Therapy Centers (CPTC) summarized in ten recommendations*"

H. Zutz "*A pulsed high-energy photon reference field for testing dosemeters used for radiation protection measurements behind shieldings from medical accelerators*"

M. Abdelrahman "*Study of the impact of the newly proposed ICRU/ICRP quantities on personal doses in a realistic radiation workplace: interventional radiology case study*"

R. Bogaerts "*A practical method for routine eye lens dosimetry of staff in interventional radiology*"

J. Dabin "*Evaluation of different types of LiF thermoluminescent detectors for ring dosimetry in nuclear medicine*"

C. Poggiali "*Eye lens dose monitoring in Interventional Radiology: a multi- centre study on endovascular, cardiology and neuroradiology interventional procedures*"

Welcome Reception

Tuesday (26 April 2022)

IM 2022

Session 5: Operational Quantities and Standardization for External Radiation (09:00 - 10:30)

Invited: R. Behrens "*Calibrations and irradiations in terms of new ICRU operational quantities for radiation protection possible in photon and beta reference radiation fields*"

R. Tanner "*EURADOS Project on the Impact of the Proposed ICRU Operational Dose Quantities*"

R. Tanner "*Conversion coefficients for Hp(10, ROT) and Hp(10, ISO) and the implications for ICRU Report 95*"

N. Hertel "*Dosimeter Angular Response and the ICRU 95 Quantity Personal Dose*"

F. Becker "*Investigation of Cf-252 Sources with a Ge Gamma Ray Detector*"

A. Cirillo "*Calibration of a large-size wide-range neutron spectrometer for environmental application*"

R. Méndez "*Experimental characterization of the new D2O-252Cf neutron standard at Spanish Neutron Standards Laboratory (CIEMAT)*"

NEUDOS 14

Session 5: EURADOS (Neutrons and ions dosimetry in medicine) (09:00 - 10:30)

Z. Knežević "*Out-of-field doses in paediatric photon and proton radiotherapy - Summary of the EURADOS WG9 activity*"

M. Davídková "*Passive dosimetry of secondary radiation produced by HYPERSCAN pencil scanning proton beam*"

G. Zorloni "*EURADOS rem-counter intercomparison in a Mevion S250i Hyperscan pulsed stray neutron field: lessons learnt and comparisons with other proton and photon therapy facilities*"

M. Majer "*Relative efficiency of radiophotoluminescent glass detectors in low energy proton beams*"

V. Mares "*A spectrometry study of a pulsed stray neutron field in Mevion S250i Hyperscan Proton Therapy Facility*"

C. Domingo "*Passive detectors' response to mixed fields from the CERF facility for their use in proton therapy out-of-field dosimetry*"

Coffee break (10:30 - 11:00)

IM 2022

Session 6: Intercomparisons and Standardization (11:00 - 12:30)

Invited: M. A. Chevallier "*Analysis of the EURADOS neutron intercomparison results according to recent ISO standards*"

X. Campo "Analysis of the ISO 8529-2 calibration methods"

A. Boziari "*EURADOS intercomparison IC2020ph on whole body dosemeters for photons*"

S. Rivera Vázquez "*Development of an extended Bonner Sphere Spectrometer with simultaneous acquisition at LPN-Ciemat*"

V. Carvalho "*Measurement of the neutron spectrum of 241AmB, 241AmLi and 241AmF sources*"

M. Bolzonella "*The EURADOS CR-39 Quality task for the optimization and harmonization of personal neutron dosimetry with CR-39*"

H. Stadtmann "*Eurados intercomparisons on whole-body dosemeters for photons from 2008 to 2020: Analysis and comparison of general results*"

H. Khoury "*Results and Analysis of Intercomparisons study for individual monitoring services of Latin-American and Caribbean Region*"

NEUDOS 14

Session 6: Micro- and Nano-dosimetry 2 (11:00 - 12:30)

Invited: A. Ruciński "*Applications of Nanodosimetry in Particle Therapy Planning*"

C. Verona "*Single crystal diamond-based microdosimeters for ion-beam therapy applications*"

M. Pietrzak "*Nanodosimetric characteristic of carbon ion beam – experiments and Monte Carlo simulations*"

M. Missiaggia "*Microdosimetric in- and out-of-field radiation field characterization of proton, helium and oxygen beams*"

D. Mazzucconi "*A wall-less TEPC for nanodosimetric measurements*"

A. Parisi "*A novel microdosimetric model of clonogenic survival: benchmark against in vitro data and in silico fragmentation studies*"

G. Petringa "A new microdosimeter detector based on Silicon Carbide technology"

A. Bianchi "*Microdosimetry of a 62 MeV clinical proton beam with five detectors*"

Lunch break (13:00 - 14:00)

IM 2022

Session 7: Individual monitoring services, quality assurance, type testing, calibration facilities (14:00 - 15:30)

M. Caresana "*The accreditation of the Politecnico di Milano as a provider for proficiency testing in external radiation dosimetry*"

T. Grimbergen "*Quality assurance for dosimetry system based on Instadose+ and Instadose2 dosemeters: long-term stability of the dosemeters and results of international intercomparisons*"

H. Hoedlmoser "*Individual monitioring with BeOSL dosemeters: state of the art and future developments*"

M. Kasprzak "*Recent Developments at the Calibration Laboratory for Radiation Protection Instruments and Dosimeters at the Paul Scherrer Institute*"

F. Rossi "*An Italian network for dosimetry services*"

M Million: "Assessment of the impact on an OSL dosimetry system of the new operational dose quantities proposed in the ICRU 95"

B. Moreno: "Optimization of calibration interval based on equipment metrological history"

NEUDOS 14

Session 7: New Developments in medicine (including dosimetry for patient dosimetry in radiotherapy and protontherapy) (14:00 - 15:30)

Invited: P. Kukołowicz "*Gafchromic in-vivo dosimetry for dynamic conformal arc therapy*"

F. Po-Wen "*Comparing the effects of various (p,xn) production on the characteristics of secondary neutrons and potential induced radioactivity in concrete walls of a biomedical cyclotron*"

M. Silari "*The GEMTEQ: A GEM Based Detector with Highly Pixelated Readout for Microdosimetry and 3D Particle Track Reconstruction*"

D. Kulig "*Light output of 3D printed plastic scintillators after surface finishing and wrapping*"

Ł. Kapłon "*Characterization and comparison of cell casted and 3D printed plastic scintillators for dosimetry applications*"

Y. I. Hsieh "*Shielding analysis of the proton therapy facility at China Medical University Hospital: comparison of a simplified point-source line-of-sight model with Monte Carlo simulations*"

J. Swakoń "60 MeV proton FLASH beam line at IFJ PAN in Kraków for research in radiobiology and dosimetry"

Coffee break (15:30 - 16:00)

IM 2022

Session 8: Computational Dosimetry and Phantoms in individual Monitoring (16:00 - 17:30)

O. Van Hoey "*Computational personal dosimetry at a realistic neutron workplace field*"

V. García Balcaza "*Dose assessment with fast Monte Carlo codes in interventional radiology*"

M. Zadehrafi "*Obtaining the national metrological traceability chain associated to the dosimetry of the eye lens by creating high-precision dosimetry phantoms*"

P. Ferrari "*How the dosemeter's placement on protective apron may affect the Hp(10) measurements in interventional cardiological and radiological procedures*"

J. Eakins "*Virtual estimation of effective dose in neutron fields: Application of the 'PODIUM' approach to a simulated workplace*"

F. Vanhavere "*Personal online dosimetry using computational methods: the PODIUM Project"*

M. A. De Sousa Lacerda "*e-Butterfly: a cloud computing Industry 4.0 neutron spectrum unfolding code*"

NEUDOS 14

Session 8: Neutrons in medicine: BNCT (16:00 - 17:30)

A. Pola "*Alzheimer Disease and NECTAR project: characterization of a neutron facility for brain cell irradiations*"

S. Agosteo "*BNCT@CNAO: a multidisciplinary research collaboration project*"

E. M. Mafucci "*Development of novel compact activation-based neutron spectrometer for BNCT*"

N. Knake "*Application of gamma spectroscopy to alpha particles dosimetry in BNCT*"

R. Bedogni "*A single moderator neutron spectrometer for neutron spectrometry in BNCT*"

M. Silarski "*A new detector concept based on the Prompt Gamma Radiation Analysis for in vivo boron monitoring in BNCT*"

M. Szczepanek "*A new model for characterizing the growth of spheroid*"

A. Selva "*The MUNES accelerator-based thermal neutron source: microdosimetric characterization*"

Wednesday (27 April 2022)

IM 2022 & NEUDOS 14

Session 9: Neutrons and ions in medicine (dosimetry for proton, ion radiotherapy, radiotherapy, patient dosimetry) (09:00 - 10:30)

Invited: E. Yukihara "*Development of an optically stimulated luminescence material with reduced ionization quenching for proton therapy dosimetry: MgB4O7:Ce,Li*"

D. Krzemepk "*Measurements of neutron and gamma dose to the fetus for pregnant patients undergoing brain tumors proton radiotherapy with modulated scanning beam*"

S. Motta "*Characterization of LiF:Mg,Ti for dosimetry in ultra-high dose rate proton beam*"

C. Corneille "*Neutron spectrometry for medical and industrial accelerators*"

M. Sądel "*2D OSL dosimetry based on LiMgPO4 foils - facilitating the high-resolution proton radiotherapy*"

D. Bortot "*Study of the p-11B nuclear reaction for the enhancement of proton therapy through a silicon telescope at CATANA facility*"

J. B. Christensen "*Evaluation of the LET measurement capabilities of various Optically Stimulated Luminescence detectors*"

Coffee break (10:30 - 11:00)

Session 10: Individual Monitoring and Dose Assessment at workplaces (11:00 - 12:30)

Invited: V. Olšovcová "*Neutron dose assessment in laser generated ultra short pulsed fields*"

G. Lavezzari "*Radiation protection measurements during the commissioning of the third-generation n_TOF neutron spallation target at CERN*"

L. Packer "*Progress in the assessment of neutron environments associated with fusion energy technologies*"

D. F. Albu "*Occupational Exposure in CANDU Nuclear Power Plant Individual Dosimetry Program at S.N Nuclearelectrica S.A - CNE Cernavoda NPP*"

J. Atanackovic "*Eye Lens Dosimetry in Canadian CANDU Nuclear Power Plants Based on Operational Dosimetric Quantities Hp(10) and Hp(0.07)*"

M. A. Lopez "*Dose assessment in a real case of internal contamination with 177Lu through a wound*"

K. Lalanne "*Characterization of a new detection system on the MIRCOM facility*"

Lunch break (13:00 - 14:00)

Poster session 1
(14:00 - 15:30)

Coffee break (15:30 - 16:00)

Excursions

Thursday (28 April 2022)

IM 2022 & NEUDOS 14

Session 11: New developments in external photon dosimetry (09:00 - 10:30):

Invited: F. Vanhavere "*Big data and machine learning: can this be used in personal dosimetry?*"

H. Yasuda "*Thermal effects on decolorization of the PVA-iodine complex containing silica nanoparticles*"

V. Barkauskas "*Experimental doses in the laser processing laboratory*"

M. Gryzinski "*Construction improvements of recombination chamber used for radiation protection*"

F. Pozzi "*Dosimeters intercomparison in ultra-short pulsed stray radiation field at SwissFEL*"

O. Hupe "*Radiation protection at ultrashort-pulsed lasers in materials processing*"

R. Sun "*Optimization and Characterization of Bi-detector Coincidence Beta-ray Spectrometry System*"

Coffee break (10:30 - 11:00)

Session 12: New developments in neutron dosimetry including instrumentation and techniques (11:00 - 13:00)

Invited: M. Caresana "*Measurements in pulsed neutron fields*"

F. Ferrulli "*Comparison between CLYC-6 and 3He for thermal neutron detection*"(

M. Sommer "*Optimization of a new neutron detector based on liquid scintillator for neutron bursts related to thunderstorms*"

M. Petit "*Extended time-of-flight measurements down to 100 keV at the AMANDE facility with a stilbene scintillator*"

M. Tisi "*Measurements of the secondary neutrons generated at the DRACO laser-driven proton accelerator*"

M. Reginatto "*Calculation and validation of the response function of a Bonner sphere spectrometer with a fission chamber as central thermal detector*"

O. Van Hoey "*Development and validation of a model for assessing neutron fluence with lithium fluoride thermoluminescent detectors*"

G. Garcia-Fernandez "*Assessment of a new extended passive neutron monitor based on TLDs with application in proton therapy centers and research facilities*"

Lunch break (13:00 - 14:00)

Session 13: New developments in internal dosimetry (14:00 - 15:30)

Invited: D. Poudel "*Analysis of regional retention of plutonium in the respiratory tract of four acutely-exposed workers using scar-tissue compartments*"

G. Landon "*Liposomal formulations of new decorporation molecules for the treatment of internal Strontium/Cobalt contaminations*"

N. Hertel "*Neutrons Emitted by Alpha-Particle Reactions and Internal Dosimetry: Does It Matter?*"

M. A. Lopez "*Improving the reliability in the internal dosimetry of uranium workers. Application of the OIR uranium model to long-term occupational intakes*"

D. Broggio "*Contact restriction time for nuclear medicine patients: a practical method and calculation tool*"

T. Kravchik "*Environmental Airborne Tritium Monitoring System based on Absorption of Tritiated Water on Calcium Chloride*"

B. Pérez "*Radioiodine in thyroid calibration for the in vivo measurement of exposed population in emergencies*"

Coffee break (15:30 - 16:00)

Poster session 2
(16:00 - 17:30)

Conference dinner

Friday (29 April 2022)

IM 2022 & NEUDOS 14

Session 14: Dosimetry in space applications including aircrew (09:00 - 10:20)

Invited: P. Bilski "*The MARE experiment – phantom radiation measurements during the NASA Artemis 1 mission to the Moon and back*"

A. Mentana "*Modelling the neutron biological effectiveness on the Mars surface*"

A. Buffler "*A new compact spectrometer for neutrons produced by cosmic rays*"

A. Calamida "*A Bonner Sphere spectrometer for the SAMADHA project*"

M. Lužová "*Angular calibration of PH32 silicon strip detectors at HIMAC*"

Coffee break (10:20 - 10:50)

Session 15: Emergency exposure situations including retrospective dosimetry and Radon Exposure (10:50 - 12:50)

M. Hjellström "*Calibration of a gamma camera for RN emergency preparedness*"

I. Vilardi "*In vivo public monitoring in emergency exposure scenarios by means of spectrometric and non-spectrometric devices*"

C. Challeton-de Vathaire "Initial individual dose assessmment following a nuclear accident"

L. Garlati "*Reference radon chamber at Politecnico di Milano: characteristics and future perspectives*"

J. F. Navarro Amaro "*In vivo monitoring at CIEMAT Whole Body Counter of a person contaminated with Lu-177 through a wound*"

A. Yule "*Practical measurement of site-specific dose coefficients for radon progeny dosimetry*"

J. Marsh "*Effective dose coefficients for radon and progeny: An update*"

Closing Ceremony

Lunch break (13:00 - 14:00)