MICROS 2013
Scientific Programme

Sunday, October 20, 2013

15.00-18.00 Registration at the “Congress Centre” – Hotel "B4 Treviso - Maggior Consiglio"
Registration Desk will remain open from Monday Oct. 21 to Friday Oct. 25 throughout the Symposium Scientific Sessions.

17.30-19.00 Opening Ceremony:
- Opening Addresses
- Opening lecture - “H.H. Rossi Lecture”
  Leslie Braby, USA:
  Experimental Microdosimetry: History, applications and recent technical advances

19.30 Welcome Party at the Hotel "B4 Treviso - Maggior Consiglio"

Monday, October 21, 2013

8.30 - 9.30 Refresher Course
- M. Dingfelder, USA:
  Cross sections for Track structure codes (Invited Speaker) [50 minutes]

9.30 - 11:00 Session I - Physics and Chemistry of radiation tracks
- T. Liamsuwan, Thailand:
  Microdosimetry of the full slowing down of protons using Monte Carlo track structure simulations [20 minutes]
- I. Plante, USA:
  A Binary-Encounter-Bethe approach to simulate DNA damage by the direct Effect [20 minutes]
- W. Friedland, Germany:
  Simulating high-LET tracks by low-LET particles focused to submicrometre scales: Monte Carlo Track-Structure based model [20 minutes]
- C. Li, China:
  DNA strand breaks induced by electrons simulated with nanodosimetry Monte Carlo simulation code - NASIC [20 minutes]

11:00 - 11:30 Coffee-Break
11.30 -13.00 **Session II – Modelling of Radiation Actions/DNA damage and repair**

**A. Rapp**, Germany:
Genome-wide analysis the gamma-H2AX response after X-ray exposure by ChIP-seq *(Invited speaker)* [30 minutes]

**M. Davidkova**, Czech Republic:
Contribution of indirect effect to cluster damage in proton irradiated DNA [20 minutes]

**L. Herr**, Germany:
Modelling Radiation Effects Based on the Spatio-Temporal Clustering of DNA Damage in Higher Order Chromatin Structures [20 minutes]

**P. Kundrat**, Germany:
Chromosome aberration model combining radiation tracks, chromatin structure, DSB repair and chromatin mobility [20 minutes]

13.00 Lunch at the Hotel "B4 Treviso - Maggior Consiglio"

14.30-16.00 **Session III – Radiation Action/RBE and Radiation Quality**

**A. Wambersie**, Belgium:
Sixteen Symposia on Microdosimetry: Applications in modern particle-beam cancer radiotherapy *(Invited speaker)* [30 minutes]

**H. Shimada**, Japan:
Atomic site-selective energy deposition to nucleobases observed by X-ray absorption spectroscopy [20 minutes]

**F. Ballarini**, Italy:
A biophysical model linking radiation-induced chromosome aberrations and cell death [20 minutes]

**J. Constanzo**, France:
RBE of two Human Head and Neck Squamous Carcinoma Cell lines irradiated by medium-energy protons of the Radiograaff platform [20 minutes]

16:00 - 16:30 Coffee-Break

16:30 -18:00 **Session IV – Multi-scale approaches**

**A. Solov’yov**, Germany:
New multiscale approach to radiation action *(Invited speaker)* [30 minutes]

**C. Poole**, Australia:
Determination of subcellular compartment sizes for estimating dose variations in radiotherapy [20 minutes]

**J. Lucido**, USA:
Incorporating Microdosimetry into Radiation Therapy Treatment Planning with Multi-Scale Monte Carlo Simulations [20 minutes]

**G. Babini**, Italy:
Investigation of radiation-induced multilayered signaling response of the inflammatory pathway [20 minutes]
Tuesday, October 22, 2013

8.30-9.30 Refresher Course

K. Prise, UK:
Radiation responses of Stem cells: targeted and non-targeted effects
(Invited speaker) [50 minutes]

9.30-10:45 Session V - Genomic instability, gene expression and signalling

M. Kadhim, UK:
Non targeted effects of radiation exposure: Recent advances
(Invited speaker) [30 minutes]

Y. Hattori, Japan:
A mathematical model of the radiation-induced responses in cellular population including cell-to-cell communications [20 minutes]

M. Eidemuller, Germany:
Potential radiation-induced genomic instability in the Swedish hemangioma cohort and consequences for breast cancer risk [20 minutes]

10.45-11:15 Coffee-Break

11.15-13.15 Session VI - Low-dose effects

C. Mothersill, Canada:
Radiation-Induced Non-Targeted Effects: Horizontal and Vertical Transmission of Genetic Change? (Invited speaker) [30 minutes]

M. Weinfeld, Canada:
Association of ATM activation and DNA repair with induced radioresistance after low-dose irradiation [30 minutes]

L. Mariotti, Italy/UK:
Stimulation of intercellular induction of apoptosis in transformed cells at very low doses: spatial and temporal features [20 minutes]

M. Yeltokova, Kazakhstan:
Deterministic effect of lens at leuker gy of patients who received low doses of ionizing radiation [20 minutes]

M. Belli, Italy:
The European Initiative on Low-Dose risk research: from the HLEG to MELODI [20 minutes]

13.15 Lunch at the Hotel "B4 Treviso - Maggior Consiglio"
14.30-16.00 **Session VII – Auger Electrons and Internal Emitters**

**S. Pszona, Poland:**
Nanodosimetry of electrons: specification of the descriptors of radiation damage – experiment and modelling [30 minutes]

**F. Villegas, Sweden:**
Monte Carlo calculated microdosimetric spread for cell nucleus-sized targets exposed to brachytherapy 125I and 192Ir sources and 60Co radiation [20 minutes]

**G. Royle, UK:**
PMMA photoresists for nanoscale quantifiable dosimetry for Auger electron-emitting radiotherapeutics [20 minutes]

**N. Varmenot, France:**
New beam monitoring tool for radiobiological experiments at the Cyclotron ARRONAX [20 minutes]

16.00 - 16:30 Coffee-Break

16:30-18:30 **Session VIII - POSTER SESSION** (Presentation of the posters with odd ID numbers)

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**Wednesday, October 23, 2013**

8.30-9.30 **Refresher Course**

**D.T. Goodhead, UK:**
Classical Approaches to Microdosimetry (and implications in radiation protection, medicine and mechanistic understanding) (Invited speaker) [50 minutes]

9.30 - 10:45 **Session IX – Cancer and non-cancer effects of ionising radiations**

**H. Schollneider, Germany:**
Dose–responses from multi-model inference for radiation-induced cardiovascular diseases in atomic bomb survivors (Invited speaker) [30 minutes]

**C. Simonetto, Germany:**
Ischemic Heart Disease in Workers at Mayak PA: Radiation risk and its evolution with age and time [20 minutes]

**B. Madas, Hungary:**
Local hyperplasia as a possible direct response of the tissue to chronic exposure to high radon concentrations [20 minutes]

10.45 - 11:15 Coffee-Break
11.15 - 13.00 **Session X - Physics and Radiobiology for Space Radiation Protection**

**F. A. Cucinotta,** USA:  
Radiation quality and the Space Risk Projection (SRP) Model 2014  
(Invited speaker) [30 minutes]

**G. Reitz,** Germany:  
Estimating dose and dose equivalent and related risk during a cruise to Mars  
[30 minutes]

**J. Guo,** Germany:  
MSL-RAD Radiation Environment Measurements [20 minutes]

**P. Beck,** Austria:  
Development of a Tissue Equivalent Proportional Counter for the assessment of the radiation quality at the International Space Station in the framework of the ESA project EUCPAD [20 minutes]

13:00 Lunch at the Hotel "B4 Treviso - Maggior Consiglio"

14:30 - 19.00 Social Tour  
"Asolo town" and "Villa Barbaro - Maser"

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**Thursday, October 24, 2013**

8.30-9.30 **Refresher Course**

**M. Waligoski,** Poland:  
The Principles of Katz's Cellular Track Structure Radiobiological Model  
(Invited speaker) [50 minutes]

9.30-10.45 **Session XI - Progress in Experimental Microdosimetry**

**A. Rosenfeld,** Australia:  
Silicon Microdosimetry (Invited speaker) [30 minutes]

**B. Grosswendt,** Germany:  
Nanodosimetric descriptors of the radiation quality of carbon ions [20 minutes]

**K. Fathi,** UK:  
Thermal simulations of SQUID based micro-calorimeter to determine a tissue equivalent factor [20 minutes]

10.45 - 11.15 Coffee-Break
11.15 -13.00 **Session XII - Progress in Experimental Microdosimetry (continuation)**

**A. Waker**, Canada:
Environmental Microdosimetry - stochastic analysis of low dose exposures
(Invited speaker) [30 minutes]

**Z. Anjomani**, Canada:
Design of a thick gas electron multiplier based multi-element microdosimetric detector [20 minutes]

**T. L. Tran**, Australia:
High spatial resolution microdosimetry with DE-E detector on C-12 beam: Monte Carlo simulations and experiment [20 minutes]

**M. Davidkova**, Czech Republic:
Microdosimetry in carbon ion beam using Track Etched Detectors [20 minutes]

**G. Magrin**, Austria:
Radiation quality measurements in ion-beam therapy: understanding the needs of the Users [20 minutes]

13.00 Lunch at the Hotel "B4 Treviso - Maggior Consiglio"

14.30-16.00 **Session XIII – Microbeam technology and Biological Applications**

**Philippe Barberet**, France:
Advances in microbeam technologies and applications (Invited speaker) [30 minutes]

**G. Garty**, USA:
Measuring the processing of reactive oxygen species in single irradiated cells [20 minutes]

**G. Dollinger**, Germany:
High resolution STED-fluorescence microscopy to reveal DSB distribution from low and high LET radiation [20 minutes]

**A. Narita**, Japan:
Real-time observation of irradiated HeLa-cell modified by fluorescent ubiquitination-based cell cycle indicator using synchrotron X-ray microbeam [20 minutes]

16.00-16.30 Coffee-Break

16.30-18.30 **Session XIV - POSTER SESSION** (Presentation of the posters with even ID numbers)

20.30 Social Dinner
"Villa Corner della Regina"
Friday, October 25, 2013

8.30-9.30 **Refresher Course**

L. Hlatky, USA:
Biological effects of proton radiation: what we know and don’t know (Invited speaker) [50 minutes]

9.30 - 11:00 **Session XV - Risk assessment**

M. Hill, UK:
FISHing for Radiation Quality: Chromosome aberrations and the role of radiation track structure (Invited speaker) [30 minutes]

F. Zenhausern, USA:
Biological assay platform for determining absorbed ionizing radiation dose after radiological and nuclear events [20 minutes]

Y. Eidelman, Russia:
Biophysical modelling of dose response for radiation-induced complex chromosomal aberrations [20 minutes]

A. Ottolenghi, Italy:
The ANDANTE project: a multidisciplinary approach to neutron RBE [20 minutes]

11:00 - 11:30 Coffee-Break

11.30 -13.20 **Session XVI - Radiotherapy including Hadrontherapy**

M. Durante, Germany:
Hypoxia and dose painting in particle therapy (Invited speaker) [30 minutes]

M. Waligorski, Poland:
A TPS kernel for inverse planning of survival-depth distributions in carbon radiotherapy, based on Katz’s Cellular Track Structure Theory [20 minutes]

T. Friedrich, Germany:
RBE of mammalian cell lines: Two distinct sources of clustered damage [20 minutes]

F. Romano, Italy:
Monte Carlo calculations of biological effects in hadrontherapy with the GEANT4 code [20 minutes]

S. Mattiazzo, Italy:
A novel idea for advanced proton imaging in Computed Tomography [20 minutes]

13.20 Symposium Closure

13.30 Lunch at the Hotel "B4 Treviso - Maggior Consiglio"