

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 Cerimony:

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. Kunderat, 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 leukery 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*)

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. Schollnberger, 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 "

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"*