

MELODI Virtual Workshop 2020 on the effects of spatial and temporal variation in dose delivery

(afternoon on 17th, 18th, 19th of November and morning on 20th November)

MELODI Award Ceremony (17th November, 12:30-13:20 CET)

Session chair: Andrzej Wojcik (SU)

Time	Speaker	Institution	Title
12:30-12:40	Andrzej Wojcik	SU	Presentation of the MELODI Award
12:40-13:00	Bjorn Baselet	SCK-CEN	Fe ion vs. X-ray irradiation: a matter of the heart?
13:00-13:20	Mieke Verslegers	SCK-CEN	Implementation of a mouse model for local pelvic irradiation to reproduce radiotherapy-associated intestinal mucositis and microbial dysbiosis
13:20-13:30	Break		

Introduction to the Workshop (17th November, 13:30-14:30 CET)

Session chair: Balázs Madas (EK)

Time	Speaker	Institution	Title
13:30-13:50	Balázs Madas	EK	General introduction
13:50-14:05	Laurence Roy	IRSN	Introduction about the links between the workshop, the MELODI SRA and the Joint Road Map
14:05-14:30	Richard Wakeford	University of Manchester	What can we learn from (plutonium) epidemiology about the effects of dose rate, radiation quality and internal exposures?
14:30-14:50	Break		

Dose rate effects (17th November, 14:50-17:00 CET)

Session chair: Laurence Roy (IRSN)

Time	Speaker	Institution	Title
14:50-15:10	Werner Rühm	HMGU	Effects of dose rate in the system of radiation protection
15:10-15:30	Donna Lowe	PHE	Dose rate effects in cell experiments: histone depletion after chronic low dose rate exposures
15:30-15:50	Antonella Tabocchini	ISS	Biological effects of extremely low dose rate in cells and organism grown in underground laboratory
15:50-16:10	Gayle Woloschak	Northwestern University	Dose rate effect in animal experiments
16:10-16:30	Dominique Laurier	IRSN	Dose rate effect in epidemiological studies
16:30-17:00	Discussion		

Internal exposures (18th November, 13:30-17:00 CET)

Session chair: Balázs Madas (EK)

Time	Speaker	Institution	Title
13:30–13:50	Nora Fenske	BfS	Radon epidemiology
13:50–14:10	Laura Mezquita	IDIBAPS	Comprehensive characterization of radon-induced lung cancer: the oncologist's perspective
14:10–14:30	Werner Hofmann	PLUS	Internal microdosimetry of radon progeny in the lung
14:30–14:50	Balázs Madas	EK	Modelling the effects of heterogeneous dose distribution upon chronic exposure to radon progeny
14:50–15:10	Jan Boei	LUMC	Applying organotypic bronchial epithelium models to study the effects of heterogeneous alpha-particle exposures
15:10–15:30	Break		
15:30–15:50	Céline Bouvier-Capely	IRSN	Micro localisation and quantification of radionuclides within tissues to support heterogeneous energy deposition
15:50–16:10	Weibo Li	HMGU	Focusing on dose heterogeneity in nuclear medicine and radiotherapy
16:10–16:30	Clarita Saldarriaga Vargas	SCK-CEN	Small-scale dosimetry in nuclear medicine therapy: quantification of radiopharmaceutical activity on sub-organ scale
16:30-17:00	Discussion		

Radiation quality (19th November, 13:30-17:00 CET)

Session chair: Giorgio Baiocco (University of Pavia)

Time	Speaker	Institution	Title
13:30–13:50	Valeria Conte	INFN	Nanodosimetry: Towards a new concept of radiation quality
13:50–14:10	Carmen Villagrasa	IRSN	Track structure simulation tools: study the correlation between the topology of the energy deposition and the initial radioinduced damage
14:10–14:30	Giorgio Baiocco	University of Pavia	Modeling approaches for tritium exposure at the cellular and subcellular scale
14:30–14:50	Thomas Friedrich	GSI	Decomposition of the effects of DNA damage interactions at different spatial scales
14:50–15:10	Burkhard Jakob	GSI	DNA damage pattern after low-LET and high-LET in the context of chromatin
15:10–15:30	Break		
15:30–15:50	Kevin Prise	QUB	Biological effects observed in cells exposed to microbeams with focus on dose inhomogeneity
15:50–16:10	Stefan Bartzsch	HMGU	Microbeam and minibeam radiation therapy focusing on the effects of dose heterogeneity
16:10–16:30	Adrianna Tartas	University of Warsaw, SU	Cellular effects of exposure to mixed alpha and photon beams
16:30-17:00	Discussion		

Partial body exposures (20th November, 9:00-12:30 CET)

Session chairs: Simone Mörtl (BfS) and Simona Pazzaglia (ENEA)

Time	Speaker	Institution	Title
9:00-9:20	Katalin Lumniczky	OSSKI	Role of exosomes in radiation-induced bystander effects
9:20-9:40	Simone Mörtl	BfS	Vesicle communication as new player in the spatial distribution of radiation effects
9:40-10:00	Mariateresa Mancuso	ENEA	Systemic Effects of Partial-body Exposure to Low Radiation Doses
10:00-10:20	Simona Pazzaglia	ENEA	Out-of-field hippocampus from partial body irradiated mice displays changes in multi-omics profile and defects in neurogenesis
10:20-10:40	Raghda Ramadan	SCK-CEN	Local thoracic X-irradiation induces acute and early term inflammatory responses in atherosclerosis-prone ApoE ^{-/-} mice and in endothelial cells
10:40-11:00	Break		
11:00-11:20	Iuliana Toma-Dasu	Stockholm University	Risk for secondary cancers after photon and proton radiotherapy
11:20-11:40	Liliana Stolarczyk	DCPT	Dosimetry for second cancer risk estimation in radiotherapy
11:40-12:00	Markus Eidemüller	HMGU	Personalised assessment of late health risks after exposure to ionising radiation and guidance for radiation applications in medicine
12:00-12:30	Discussion		