

**MMND (Mini-Micro-Nano Dosimetry)
Program
10 to 12 February 2020**

Monday 10 February 2020

Time start	Time End	Speaker	Affiliation	Country	Abstract No	Title
7:30	8:00					Registration
8:00	8:10	Anatoly Rozenfeld Valerie Linton	CMRP/UOW, General Chair MMND ITRO Executive Dean, EIS, UOW, NSW	Australia		Welcome
Space Dosimetry			Session Chairs: Jaap Velthuis & Linh Tran			
8:10	8:30	Larry Pinsky	University of Houston, Texas	USA	162	THE TIMEPIX2 CHIP FOR SPACE RADIATION AND HADRON THERAPY MEASUREMENTS
8:30	8:40	Larry Pinsky	University of Houston, Texas	USA	135	THE LINEAR ENERGY TRANSFER SPECTROMETER FOR RADIATION MEASUREMENTS ON THE LUNAR SURFACE
8:40	8:55	Gordon Neue	Czech Technical University Prague	Czech Republic	122	THE PANTHERPIX DETECTOR
8:55	9:10	Miroslav Havranek	Czech Technical University Prague	Czech Republic	140	SPACEPIX-2: SOI-MAPS SENSOR FOR SPACE RADIATION MONITORING
9:10	9:25	Rémi Barillon	Strasbourg University-CNRS	France	171	SIMULATION OF EXPERIMENTAL CHEMICAL CROSS SECTIONS OF IONS IN A POLYMER (PADC)
Pixelated Detectors			Session Chairs: Marco Petasecca & Miroslav Havranek			
9:25	9:50	Jaap Velthuis	University of Bristol	UK	114	REAL-TIME, UPSTREAM, RADIOTHERAPY VERIFICATION USING A MONOLITHIC ACTIVE PIXEL SENSOR SYSTEM
9:50	10:05	Maria Marcisovska	Czech Technical University Prague	Czech Republic	119	X-CHIP-03 – A MONOLITHIC SOI PIXEL DETECTOR FOR DOSIMETRY AND RADIATION IMAGING
10:05	10:20	Florian Mentzel	TU Dortmund University	Germany	142	FROM HEP TO HOSPITAL: UTILIZING ATLAS DETECTOR AND ANALYSIS TECHNOLOGY FOR MEDICAL PHYSICS PROJECTS
10:20	10:50	Morning Tea				
Detectors For Dosimetry			Session Chairs: Michael Lerch & Jiri Zajicek			
10:50	11:15	Natko Skukan	IAEA, Vienna	Austria	174	IAEA ACTIVITIES IN THE AREAS OF MICRO-, NANO- AND BIOLOGICAL DOSIMETRY
11:15	11:30	Alex Santos	University of Adelaide, SA	Australia	137	3D DOSE DISTRIBUTION MEASUREMENT USING 2D IMAGING FROM NaCl OPTICAL CRYSTALS
11:30	11:45	Wataru Kada	Gunma University	Japan	145	DEVELOPMENT OF WIDE-BANDGAP SEMICONDUCTOR BASED DOSIMETER FOR LET DISTRIBUTION MEASUREMENT IN CARBON THERAPY FIELD
11:45	12:00	Richard Hugtenburg	Swansea University	UK	128	MONTE CARLO BASED CORRECTIONS FOR THE DOSIMETRY OF X-RAY MICROBEAMS WITH DIAMOND DETECTORS
12:00	12:15	Marco Petasecca	CMRP, University of Wollongong, NSW	Australia	214	ORGANIC SEMI-CONDUCTORS FOR DOSIMETRY
12:15	12:30	Prabhakar Ramachandran	Radiation Oncology, Princess Alexandra Hospital, QLD	Australia	192	ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY FOR GAMMA KNIFE DOSIMETRY
12:30	13:30	Lunch				
Microdosimetry			Session Chairs: Anatoly Rozenfeld & Anna Bianchi			
13:30	13:55	Yigal Horowitz	Ben Gurion University of the Negev, Beersheva	Israel	102	MANIPULATION OF THE TL DOSE RESPONSE OF COMPOSITE GLOW PEAK 5 IN TLD-100 VIA OPTICAL EXCITATION; POTENTIAL FOR IMPROVED DOSE RESPONSE LINEARITY FOR CLINICAL DOSIMETRIC APPLICATIONS!
13:55	14:20	Johannes Leidner	CERN, Geneva	Switzerland	106	MICRODOSIMETRY WITH GEMTEQ, A NOVEL MICRODOSIMETER
14:20	14:45	Alessio Parisi	Belgian Nuclear Research Centre SCK CEN, Mol	Belgium	120	MICRODOSIMETRIC MODELING OF RADIATION-INDUCED LUMINESCENCE
14:45	15:00	Linh Tran	CMRP, University of Wollongong, NSW	Australia	163	UPDATE ON THE DEVELOPMENT OF SOI MICRODOSIMETRY: CURRENT STATUS
15:00	15:15	Jiri Zajicek	Czech Institute of Experimental and Applied Physics in Prague	Czech Republic	213	DUAL MRI-SPECT IMAGING SYSTEM REALISED WITH TIMEPIX PIXEL DETECTOR INSERTED INTO MR SMALL ANIMAL SCANNER
15:15	15:45	Afternoon Tea				
Microdosimetry (cont)			Session Chairs: Susanna Guatelli & Alessio Parisi			
15:45	16:00	Anna Bianchi	Belgian Nuclear Research Centre SCK CEN, Mol	Belgium	131	MICRODOSIMETRY AT THE 62 MEV PROTON BEAM LINE OF CATANA
16:00	16:15	Anna Selva	INFN Legnaro (PD)	Italy	144	TOWARDS A COMPACT EXPERIMENTAL SETUP FOR MICRODOSIMETRY
16:15	16:30	Tsi-Chian Chao	Chang Gung University, Kwei-Shan Tao-Yuan	Taiwan	155	GNP ENHANCED RESPONSES IN A TPC FOR 192Ir SOURCE
16:30	16:45	Yeuh (Rick) Chiang	Chang Gung University, Kwei-Shan Tao-Yuan	Taiwan	150	EVALUATE THE EQUIVALENCE ON LET SPECTRA BETWEEN NEUTRON AND PROTON FOR RADIATION REALIBILITY TESTING
High Spatial Resolution Dosimetry			Session Chairs: Engang Li & Anna Vignati			
16:45	17:00	Alex Santos	University of Adelaide, SA	Australia	138	EVALUATING THE USE OF SILICA AND PMMA OPTICAL FIBRES AS PROTON BEAM MONITORS
17:00	17:15	Michael Lerch	CMRP, University of Wollongong, NSW	Australia	215	MINI-DOSIMETRY TO MRT DELIVERY: RADIOSURGERY FOR BRAIN CANCER USING SUBMILLIMETER SYNCHROTRON X-RAY BEAMS
19:00	21:30	Welcome Reception				

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Tuesday 11 February 2020

Time start	Time End	Speaker	Affiliation		Abstract No	Title		
7:30	8:00	Registration						
		Radiobiology					Session Chairs: Stephanie Corde-Tehei & Taku Inaniwa	
8:00	8:25	Stefan Both	University Medical Center, Groningen	Netherlands	157	THE MODEL BASED CLINIC: WHAT'S UNDER THE HOOD?		
8:25	8:45	Francesco Romano	INFN Catania	Italy	117	CHALLENGES IN DOSIMETRY OF PARTICLE BEAMS WITH ULTRA-HIGH PULSE DOSE RATES		
8:45	9:10	Eric Diefenderfer	University of Pennsylvania, Philadelphia	USA	177	ROBUST AND REPRODUCIBLE IRRADIATION TECHNIQUES FOR PROTON FLASH		
9:10	9:30	Eric Grant	Radiation Effects Research Foundation, Hiroshima	Japan	152	CANCER INCIDENCE AMONG THE LIFE SPAN STUDY OF ATOMIC BOMB SURVIVORS		
9:30	9:45	Alessio Parisi	Belgian Nuclear Research Centre SCK CEN, Mol	Belgium	121	DEVELOPMENT OF AN IMPROVED BIOLOGICAL WEIGHTING FUNCTION		
9:45	10:15	Morning Tea						
		Protons and HIT					Session Chairs: Martin Carolan & Gabriel Sawakuchi	
10:15	10:40	Taku Inaniwa	NIRS QST, Chiba	Japan	110	STOCHASTIC MICRODOSIMETRIC KINETIC MODEL FOR HYPER-FRACTIONATED MULTI-ION THERAPY		
10:40	10:55	Sung Hyun Lee	NIRS QST, Chiba	Japan	108	MICRODOSIMETRIC STUDY FOR HELIUM-ION BEAM USING FULLY 3D SILICON MICRODOSIMETERS		
10:55	11:15	Anna Vignati	INFN, Torino	Italy	141	THIN LOW-GAIN AVALANCHE DETECTORS FOR PARTICLE THERAPY APPLICATIONS		
11:15	11:35	Severine Rossomme	IBA Dosimetry, Schwarzenbruck	Germany	130	A NEW COMPACT DAILY QA DEVICE FOR PROTON PBS SYSTEM		
11:35	11:50	David Bolst	CMRP, University of Wollongong, NSW	Australia	216	IN-SILICO MICRODOSIMETRY FOR HADRON THERAPY		
11:50	12:05	Suresh Rana	Miami Cancer Institute, Baptist Health South Florida, Miami	USA	116	EVALUATION OF SPOT POSITION AND SPOT SIZE USING VOLUMETRIC REPAINTING TECHNIQUE IN PENCIL BEAM SCANNING PROTON THERAPY		
12:05	13:05	Lunch						
		Nanodosimetry					Session Chairs: Moeava Tehei & Anna Selva	
13:05	13:25	Gabriel Sawakuchi	The University of Texas MD Anderson Cancer Centre, Texas	USA	182	RADIATION MEASUREMENTS NANOSCALE IN LIVE CELLS USING FN-TDS		
13:25	13:45	Valeria Conte Anna Selva	INFN, Legnaro (Padova)	Italy	132	AN AVALANCHE CONFINEMENT TEPC AS CONNECTING BRIDGE FROM MICRO TO NANODOSIMETRY		
13:45	14:00	Dousatsu Sakata	NIRS QST, Chiba	Japan	109	EVALUATION OF IONIZING RADIATION INDUCED DNA DAMAGE ON A CELL NUCLEUS BY INTEGRATED TRACK STRUCTURE MONTE CARLO SIMULATIONS USING GEANT4-DNA		
		BNCT and Accelerator Physics					Session Chairs: Dale Prokopovich & Suzie Sheehy	
14:00	14:25	Suzie Sheehy	University of Melbourne, Victoria	Australia	147	PRESENT AND FUTURE OF MEDICAL ACCELERATORS		
14:25	14:55	Afternoon Tea						
14:55	15:20	Koji Noda	NIRS QST, Chiba	Japan	200	ADVANCEMENT OF HEAVY-ION THERAPY WITH HIMAC		
15:20	15:30	Chris Beltran	Mayo Clinic, Rochester	USA	169	FIRST C-12 THERAPY IN THE USA		
15:30	15:50	Mas Umezawa	Hitachi	Japan	202	COMBINED PROTON AND HIT FACILITY		
15:50	16:05	Hiroaka Kumada	University of Tsukuba, Tsukuba	Japan	133	MULTIMODAL MONTE CARLO TREATMENT SYSTEM CAPABLE OF MICRODOSIMETRY WITH PHITS		
16:05	16:20	Kenta Takada	Gunma Prefectural College of Health Sciences, Gunma	Japan	124	MICRODOSIMETRIC APPLICATIONS USING PHITS FOR PROTON THERAPY AND BNCT BASED ON FULL MOCK-UP SIMULATION GEOMETRIES		
16:20	16:35	Mitra Safavi-Naeini	ANSTO, NSW	Australia	164	NEUTRON CAPTURE ENHANCED PARTICLE THERAPY (NCEPT): IN VITRO PROOF OF CONCEPT		
		Nanomedicine and Simulations for Medical Physics					Session Chairs: Dousatsu Sakata & Mitra Safavi-Naeini	
16:35	16:50	Moeava Tehei	CMRP, University of Wollongong, NSW	Australia	217	NANOMEDICINE FOR MRT: WHAT'S PAST IS PROLOGUE		
16:50	17:05	Susanna Guatelli	CMRP, University of Wollongong, NSW	Australia	208	G4_MED: A GEANT4 BENCHMARKING AND REGRESSION TESTING SUITE FOR MEDICAL PHYSICS APPLICATIONS		
17:05	17:20	Brad Oborn	CMRP, University of Wollongong, NSW	Australia	209	MONTE CARLO SIMULATIONS FOR MRI GUIDED PARTICLE THERAPY		

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Wednesday 12 February 2020

Time start	Time End	Speaker	Affiliation		Abstract No	Title
7:30	8:00					Registration
PET and other Imaging			Session Chairs: Will Ryder & Brian Hutton			
8:00	8:25	Taiga Yamaya	NIRS QST, Chiba	Japan	160	WHOLE GAMMA IMAGING: A NOVEL COMBINATION OF PET AND COMPTON IMAGING
8:25	8:50	Katia Parodi	Ludwig-Maximilians-Universitat, Munchen	Germany	161	SIRMIO: A NOVEL PLATFORM FOR PRECISION IMAGE-GUIDED SMALL ANIMAL PROTON IRRADIATION
8:50	9:05	Chie Toramatsu	Tokyo Women's Medical University	Japan	190	BIOLOGICAL WASHOUT EFFECT IN IN-BEAM PET: ANIMAL STUDIES
9:05	9:20	Steven Avery	University of Pennsylvania	USA	194	EXPERIMENTAL RESULTS OF PROTOACOUSTICS CAPABILITY TO VERIFY PROTON RANGE FOR CNS CASES
9:20	9:35	Dieter Roehrich	University of Bergen, Bergen	Norway	134	THE BERGEN PROTON CT PROJECT – PROTON TRACKING IN A HIGH-GRANULARITY DIGITAL TRACKING CALORIMETER
Innovation in Quality Assurance detectors for Radiotherapy			Session Chairs: Saree Alnaghy & Maria Marcisovska			
9:35	9:50	Giordano Biasi	CMRP, University of Wollongong, NSW	Australia	210	SEMICONDUCTOR DOSIMETRY IN MODERN X-RAYS RADIOTHERAPY: CURRENT STATUS OF RESEARCH AT THE CMRP
9:50	10:05	Dale Prokopovich	ANSTO, NSW	Australia	211	COMMISSIONING PARTICLE BEAMS AT MEDAUSTRON - INVOLVEMENT WITH THE CARBON AND HIGH ENERGY PROTON COMMISSIONING
10:05	10:35	Morning Tea				
Novel Brachytherapy Treatments			Session Chairs: Joseph Bucci & Dean Cutajar			
10:35	11:05	Michael Zelefsky	MSKCC, New York	USA	167	EARLY RESULTS OF INTRAOPERATIVE IMAGE-GUIDED DOSE PAINTING AND TUMOUR ABLATION OF THE DIL WITH HDR BRACHYTHERAPY FOR RECURRENT PROSTATE CANCER
11:05	11:35	Yona Keisari	Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv	Israel	103	EFFECTIVE TREATMENT OF METASTATIC CANCER BY AN INNOVATIVE INTRATUMORAL ALPHA PARTICLE MEDIATED RADIOTHERAPY IN COMBINATION WITH IMMUNOTHERAPY
11:35	11:50	Anatoly Rozenfeld	CMRP, University of Wollongong, NSW	Australia	197	REAL TIME DOSIMETRY FOR DART
11:50	12:10	Annette Haworth	School of Physics, University of Sydney, NSW	Australia	153	USE OF CONTEMPORARY BRACHYTHERAPY APPROACHES IN CLINICAL TRIALS
12:10	12:25	Joel Poder	St. George Hospital Cancer Care Centre, Kogarah	Australia	104	CAN IN-VIVO SOURCE TRACKING DEVICES DETECT CLINICALLY SIGNIFICANT SOURCE POSITIONING ERRORS IN HDR PROSTATE BRACHYTHERAPY TREATMENT DELIVERIES?
12:25	12:40	Antonio Damato	MSKCC, New York	USA	198	CHALLENGES IN CLINICAL IMPLEMENTATION OF DIFFUSING ALPHA-EMITTERS RADIATION THERAPY (DART)
12:40	12:55	Eduardo Moros	Department of Radiation Oncology, Moffitt Cancer Center, Tampa FL	USA	127	DEVELOPMENT OF A MONTE CARLO VOXEL-BASED 3D RADIATION DOSIMETRY METHOD FOR A TARGETED ALPHA PARTICLE THERAPY
12:55	13:55	Lunch				
Radiomics and Genomics			Session Chairs: Tomas Kron & Michael Jackson			
13:55	14:20	Joe Deasy	MSKCC, New York	USA	201	MAKING RADIOMICS ROBUST: NEW METHODS OF ANALYSIS AND STANDARDIZATION
14:20	14:45	Lois Holloway	Liverpool Hospital, NSW	Australia	170	CLINICAL PRACTICE VARIATION IN RADIOMICS FEATURES AND OPPORTUNITIES FOR USING RADIOMICS TO SUPPORT RADIOTHERAPY PRACTICE
14:45	15:05	Igor Barani	Barrow Neurologic Institute	USA	168	CHALLENGES AND LIMITATIONS OF DEEP-LEARNING-BASED RADIOMICS
15:05	15:35	Afternoon Tea				
15:35	15:55	Daniel Moses	POWH, Sydney	Australia	199	MRI QUANTITATIVE IMAGING BIOMARKERS IN CLINICAL ONCOLOGICAL TRIALS
15:55	16:15	Gabriel Sawakuchi	The University of Texas MD Anderson Cancer Centre, Texas	USA	175	TOWARDS PERSONALIZED RADIATION THERAPY - PREDICTING THE RESPONSE OF RADIATION ALONE OR RADIATION COMBINED WITH DNA REPAIR INHIBITORS USING GENE EXPRESSION OF DNA REPAIR GENE!
16:15	16:30	Eduardo Moros	Department of Radiation Oncology, Moffitt Cancer Center, Tampa FL	USA	126	NOVEL MEDICAL PHYSICS APPROACHES TO PERSONALIZE RADIATION THERAPY
16:30	16:45	Federico Colecchia	Queen Square Institute of Neurology, University college London	UK	123	KNOWLEDGE-DRIVEN DEEP NEURAL NETWORK MODELS FOR BRAIN TUMOUR SEGMENTATION
16:45	17:00	Kujtim Latifi	Department of Radiation Oncology, Moffitt Cancer Center, Tampa FL	USA	203	TRAINING AND VALIDATION OF A COMMERCIAL DEEP LEARNING CONTOURING PLATFORM
17:00	17:15	Dominic Maes	Seattle Cancer Care Alliance Proton Therapy Center, Seattle	USA	115	A MACHINE LEARNING APPROACH TO LOG FILE ANALYSIS FOR PROTON PENCIL BEAM SCANNING (PBS)
17:15	17:30	Markus Hagenbuchner	SCIT UOW, NSW	Australia	151	OVERCOMING THE BLACK BOX PROBLEM OF AI IN ONCOLOGY
Clinical Radiotherapy			Session Chairs: Peter Metcalfe & Anna Ralston			
17:30	17:50	Vladimir Feygelman	Department of Radiation Oncology, Moffitt Cancer Centre, Tampa, FL	USA	112	CHALLENGES IN PATIENT-SPECIFIC DOSIMETRIC QA OF SINGLE-ISOCENTER MULTIPLE-TARGETS SRS
17:50	18:05	Thomas Billoud	Chez Institute of Experimental and Applied Physics in Prague	Czech Republic	212	DISTINGUISHING THE CONTRIBUTIONS OF MIXED RADIATION FIELDS TO DOSE MEASUREMENTS WITH TIMEPIX DETECTORS
18:05	18:15	Closing				