

Monte Carlo Workshop for Radiotherapy, Imaging and Radiation Protection

Report of Contributions

Contribution ID: 1

Type: **not specified**

Registration - Building 32.G01, UOW Main Campus, Wollongong

Friday 6 December 2019 08:00 (50 minutes)

Contribution ID: 2

Type: **not specified**

The Centre For Medical Radiation Physics, Wollongong University

Friday 6 December 2019 09:15 (30 minutes)

Presenter: ROZENFELD, Anatoly (University of Wollongong)

Contribution ID: 3

Type: **not specified**

Geant4-DNA: recent developments

Presenter: INCERTI, Sebastien (CNRS/IN2P3)

Contribution ID: 4

Type: **not specified**

Geant4-DNA: recent developments

Friday 6 December 2019 09:45 (30 minutes)

Presenter: INCERTI, Sebastien (CNRS/IN2P3)

Session Classification: Session I

Contribution ID: 5

Type: **not specified**

Geant4-DNA: Development of low energy cross sections for water and gold

Friday 6 December 2019 10:15 (30 minutes)

Presenter: KYRIAKOU, Ioanna (Ioannina University)

Session Classification: Session I

Contribution ID: 6

Type: **not specified**

Evaluation of ionizing radiation induced early DNA damage on a cell nucleus by integrated track structure Monte Carlo simulations using Geant4-DNA

Friday 6 December 2019 11:00 (30 minutes)

Presenter: SAKATA, Dousatsu (NIRS, Japan)

Session Classification: Session I

Contribution ID: 7

Type: **not specified**

Mechanistic modelling of biological responses to radiation-induced damage

Friday 6 December 2019 11:30 (30 minutes)

Presenter: MCMAHON, Stephen (Queen's University Belfast)

Session Classification: Session I

Contribution ID: 8

Type: **not specified**

Microdosimetry with Geant4 for Quality Factor Estimates

Friday 6 December 2019 12:00 (30 minutes)

Presenter: KYRIAKOU, Ioanna (Ioannina University)

Session Classification: Session I

Contribution ID: 9

Type: **not specified**

Gold nanoparticle radio-enhancement in kilovoltage X-ray radiotherapy: in-silico determination of cell survival curves using novel Geant4-DNA physics models for gold and Local Effect Model

Presenter: GUATELLI, Susanna

Session Classification: Session I

Contribution ID: **10**

Type: **not specified**

Quantitative estimation of biological effects after irradiation by MPEXS-DNA

Friday 6 December 2019 13:30 (40 minutes)

Presenter: OKADA, Shogo

Session Classification: Session II

Contribution ID: 11

Type: **not specified**

GPU acceleration of Monte Carlo dose calculation for proton therapy

Friday 6 December 2019 14:10 (30 minutes)

Presenter: CHEN, Ye (KEK, Japan)

Session Classification: Session II

Contribution ID: 12

Type: **not specified**

Validation of Geant4 for microdosimetry applications

Friday 6 December 2019 14:40 (30 minutes)

Presenter: BOLST, David (Wollongong University)

Session Classification: Session III

Contribution ID: 13

Type: **not specified**

Geant4 simulations for microdosimetry in BNCT

Friday 6 December 2019 15:10 (30 minutes)

Presenter: VOHRADSKY, James (University of Wollongong)

Session Classification: Session III

Contribution ID: 14

Type: **not specified**

New methods for the Linear Energy Transfer (LET) and Relative Biological Effectiveness (RBE) calculation by using Geant4 Monte Carlo code

Presenter: PETRINGA, Giada (LNS, INFN)

Session Classification: Session III

Contribution ID: 15

Type: **not specified**

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Contribution ID: **16**

Type: **not specified**

Introduction

Friday 6 December 2019 08:50 (10 minutes)

Presenter: GUATELLI, Susanna

Contribution ID: 17

Type: **not specified**

Geant4 simulations for microdosimetry in Fast Neutron Therapy

Friday 6 December 2019 16:00 (30 minutes)

Presenter: VORAHDSKY, James (Wollongong University)

Session Classification: Session III

Contribution ID: **18**

Type: **not specified**

Evaluation of novel organic materials for microdosimetry

Friday 6 December 2019 16:30 (30 minutes)

Presenter: LARGE, Matthew (Wollongong University)

Session Classification: Session III

Contribution ID: 19

Type: **not specified**

Geant4-based microdosimetry for astronauts' radiation protection

Friday 6 December 2019 17:00 (30 minutes)

Presenter: PERACCHI, Stefania (Wollongong University)

Session Classification: Session III

Contribution ID: 20

Type: **not specified**

NS_Radlist –a new atomic radiation data base for basic science and applications

Saturday 7 December 2019 10:50 (30 minutes)

Presenter: KIBEDI, Tibor (Australian National University)

Session Classification: Session IV

Contribution ID: 21

Type: **not specified**

Low-energy Auger and conversion electron spectroscopy of medical isotopes

Saturday 7 December 2019 09:30 (30 minutes)

Presenter: TEE, Bryan (Australian National University)

Session Classification: Session IV

Contribution ID: 22

Type: **not specified**

X-ray fluorescence with ANSTO libraries

Saturday 7 December 2019 10:00 (30 minutes)

Presenter: BAKR, Samer (Wollongong University)

Session Classification: Session IV

Contribution ID: 23

Type: **not specified**

Improved total reaction cross section models for Geant4

Saturday 7 December 2019 11:20 (30 minutes)

Presenter: SIMPSON, Edward (Australian National University)

Session Classification: Session IV

Contribution ID: 24

Type: **not specified**

Benchmarking Monte Carlo codes

Contribution ID: 25

Type: **not specified**

G4-Med: a benchmarking system for Geant4 in medical physics

Saturday 7 December 2019 11:50 (15 minutes)

Presenter: GUATELLI, Susanna

Session Classification: Session V

Contribution ID: 26

Type: **not specified**

Validation of the Geant4 radioactive decay and emission of Auger electrons

Saturday 7 December 2019 12:05 (30 minutes)

Presenter: BAKR, Samer (Wollongong University)

Session Classification: Session V

Contribution ID: 27

Type: **not specified**

Geant4 studies for brachytherapy Quality Assurance

Saturday 7 December 2019 13:25 (30 minutes)

Presenter: CUTAJAR, Dean (Wollongong University)

Session Classification: Session VI

Contribution ID: 28

Type: **not specified**

Geant4 studies for protontherapy Quality Assurance

Saturday 7 December 2019 13:55 (30 minutes)

Presenter: OBORN, Brad (Wollongong University)

Session Classification: Session VI

Contribution ID: 29

Type: **not specified**

TBA

Presenter: BLAKE, Sam (Sydney University)

Session Classification: Session VI

Contribution ID: **30**

Type: **not specified**

Monte-Carlo calculations of kQ at the Australian Primary Standards Dosimetry Laboratory

Saturday 7 December 2019 14:25 (30 minutes)

Presenter: HANLON, Max (ARPANSA)

Session Classification: Session VI

Contribution ID: 31

Type: **not specified**

Adaptation of ICRP 110 Geant4 Human Phantom for Molecular Radiation Therapy Dosimetry

Saturday 7 December 2019 14:55 (20 minutes)

Presenter: SALMAN, Muhammad

Session Classification: Session VI

Contribution ID: 32

Type: **not specified**

Geant4 Development and Applications in Nuclear Well Logging

Saturday 7 December 2019 15:35 (30 minutes)

Presenter: ZHANG, Qiong (University of Electronic Science and Technology)

Session Classification: Session VII

Contribution ID: 33

Type: **not specified**

A Geant4 simulation of cosmogenic radionuclide production in sodium iodide for the SABRE dark matter experiment

Saturday 7 December 2019 16:05 (30 minutes)

Presenter: ZHONG, Yi Yi (Australian National University)

Session Classification: Session VII

Contribution ID: 34

Type: **not specified**

Evaluating the lineal energy and secondary particle yields in a FinFET structure

Saturday 7 December 2019 16:35 (30 minutes)

Presenter: CHIANG, Rick

Session Classification: Session VII

Contribution ID: 35

Type: **not specified**

Simulating Betavoltaic Cells for Cubesat Space Applications

Saturday 7 December 2019 17:05 (30 minutes)

Presenter: ZHOU, Raymond (University of New South Wales)

Session Classification: Session VII

Contribution ID: 36

Type: **not specified**

Framework for image quality and physical dose predictions of arbitrary CBCT source-detector trajectories using GATE

Presenter: RUSS, Tom (Heidelberg University)

Session Classification: Session VIII

Contribution ID: 37

Type: **not specified**

Risk of radiation-induced breast cancer in phase-contrast mammography

Sunday 8 December 2019 09:30 (30 minutes)

Presenter: BEAUDOX, Vincent (Bordeaux University)

Session Classification: Session VIII

Contribution ID: 38

Type: **not specified**

In-Silico Optimisation of Tileable SiPM Based Monolithic Scintillator Detectors for SPECT Applications

Sunday 8 December 2019 09:00 (30 minutes)

Presenter: BROWN, Jeremy

Session Classification: Session VIII

Contribution ID: 39

Type: **not specified**

**Towards Actively Collimated Multi-tracer Imaging
(ACMI): A MR compatible active collimation element
for high performance simultaneous PET/SPECT
imaging at the human scale**

Sunday 8 December 2019 10:00 (30 minutes)

Presenter: BROWN, Jeremy

Session Classification: Session VIII

Contribution ID: 40

Type: **not specified**

GEANT: A useful tool for different branches of science

Presenter: MONDAL, Nagendra (Department of Physics, Techno International –Batanagar (Techno India Group))

Session Classification: Session VIII

Contribution ID: 41

Type: **not specified**

NEMA-NU 2-2012 Validation of a Geant4 Model of a Whole-Body Prototype PET Scanner with Four-Layer Depth-of-Interaction Detectors

Sunday 8 December 2019 11:00 (30 minutes)

Presenter: AHMED, Abdella (ANSTO)

Session Classification: Session VIII

Contribution ID: 42

Type: **not specified**

Geant4 study for dose reconstruction in hadron therapy using in-vivo PET

Sunday 8 December 2019 12:00 (30 minutes)

Presenter: RUTHERFORD, Harley (Wollongong University)

Session Classification: Session VIII

Contribution ID: 43

Type: **not specified**

Final remarks

Presenter: GUATELLI, Susanna

Contribution ID: 44

Type: **not specified**

Monte Carlo simulations for in-vivo PET in Heavy Ion Therapy

Sunday 8 December 2019 11:30 (30 minutes)

Presenter: CHACON, Andrew (University of Wollongong)

Session Classification: Session VIII

Contribution ID: 45

Type: **not specified**

Welcome speech by the Dean of UOW Engineering and Information Sciences

Friday 6 December 2019 09:00 (15 minutes)

Speech by Prof. Valerie Linton

Presenter: Prof. LINTON, Valerie (University of Wollongong)

Contribution ID: 46

Type: **not specified**

Final remarks

Sunday 8 December 2019 12:30 (10 minutes)

Presenter: GUATELLI, Susanna

Session Classification: Session VIII