

Geant4 Users Workshop

Report of Contributions

Contribution ID: 4

Type: **not specified**

Solid State Micro-and Mini-Dosimetry in Particle Therapy

Wednesday, September 20, 2017 9:30 AM (30 minutes)

Primary author: ROSENFELD, Anatoly (CMRP, University of Wollongong)

Presenter: ROSENFELD, Anatoly (CMRP, University of Wollongong)

Contribution ID: 5

Type: **not specified**

Welcome address

Wednesday, September 20, 2017 9:15 AM (15 minutes)

Presenter: GUATELLI, Susanna (CMRP, University of Wollongong)

Contribution ID: 6

Type: **not specified**

Geant4 –past, current and future

Wednesday, September 20, 2017 10:00 AM (30 minutes)

Primary author: ASAI, Makoto (SLAC National Accelerator Laboratory (US))

Presenter: ASAI, Makoto (SLAC National Accelerator Laboratory (US))

Contribution ID: 7

Type: **not specified**

The Geant4 Geometry modeler, recent developments

Wednesday, September 20, 2017 11:00 AM (30 minutes)

Primary author: COSMO, Gabriele (CERN)

Presenter: COSMO, Gabriele (CERN)

Contribution ID: 8

Type: **not specified**

Geant4 for medical physics: recent developments

Wednesday, September 20, 2017 11:30 AM (30 minutes)

Primary author: GUATELLI, Susanna (CMRP, University of Wollongong)

Presenter: GUATELLI, Susanna (CMRP, University of Wollongong)

Contribution ID: 9

Type: **not specified**

Recent developments of the Geant4-DNA extension of the Geant4 Monte Carlo simulation toolkit

Wednesday, September 20, 2017 12:00 PM (30 minutes)

Primary author: Dr INCERTI, Sebastien Laurent (Centre National de la Recherche Scientifique (FR))

Presenter: Dr INCERTI, Sebastien Laurent (Centre National de la Recherche Scientifique (FR))

Contribution ID: **10**

Type: **not specified**

New theoretical atomic radiation library for basic science and applications

Wednesday, September 20, 2017 1:30 PM (30 minutes)

Primary author: KIBEDI, Tibor (Australian National University (ANU))

Presenter: KIBEDI, Tibor (Australian National University (ANU))

Contribution ID: 11

Type: **not specified**

Inclusion of novel proton and alpha shell ionisation cross sections in Geant4

Wednesday, September 20, 2017 2:00 PM (30 minutes)

Primary author: BAKR, Samer (CMRP, University of Wollongong)

Presenter: BAKR, Samer (CMRP, University of Wollongong)

Contribution ID: 12

Type: **not specified**

Improving Geant4 Coherent Scattering by adding nuclear Thomson and Delbrück processes

Wednesday, September 20, 2017 2:30 PM (30 minutes)

Primary author: OMER, Mohamed (Japan Atomic Energy Agency)

Presenter: OMER, Mohamed (Japan Atomic Energy Agency)

Contribution ID: 13

Type: **not specified**

A Bethe-Heitler 5D polarized photon-to-e+e-pair conversion event generator

Wednesday, September 20, 2017 3:00 PM (30 minutes)

Primary author: BERNARD, Denis Robert Leon (Centre National de la Recherche Scientifique (FR))

Presenter: BERNARD, Denis Robert Leon (Centre National de la Recherche Scientifique (FR))

Contribution ID: 14

Type: **not specified**

Strangeness in the liège intranuclear cascade model

Wednesday, September 20, 2017 3:30 PM (30 minutes)

Primary author: HIRTZ , Jason (IRFU, CEA, Université Paris-Saclay)

Presenter: HIRTZ , Jason (IRFU, CEA, Université Paris-Saclay)

Contribution ID: 15

Type: **not specified**

Validation of Geant4 Fragmentation for Heavy Ion Therapy by means of microdosimetry measurements

Wednesday, September 20, 2017 4:30 PM (30 minutes)

Primary author: BOLST, David (CMRP, University of Wollongong)

Presenter: BOLST, David (CMRP, University of Wollongong)

Contribution ID: 16

Type: **not specified**

Evaluation of Geant4 for in-vivo range verification in Heavy Ion Therapy

Wednesday, September 20, 2017 5:30 PM (30 minutes)

Primary author: CHACON, Andrew (CMRP, University of Wollongong)

Presenter: CHACON, Andrew (CMRP, University of Wollongong)

Contribution ID: 17

Type: **not specified**

A Geant4 simulation study for in-vivo range verification in protontherapy

Wednesday, September 20, 2017 6:00 PM (30 minutes)

Primary author: ZARIFI, Melek (CMRP, University of Wollongong)

Presenter: ZARIFI, Melek (CMRP, University of Wollongong)

Contribution ID: **18**

Type: **not specified**

TOPAS

Thursday, September 21, 2017 9:00 AM (30 minutes)

Primary author: PERL, Joseph

Presenter: PERL, Joseph

Contribution ID: 19

Type: **not specified**

Geant4 activities in the radiation therapy field at the University of Seville

Thursday, September 21, 2017 10:00 AM (30 minutes)

Primary author: CORTES GIRALDO, Miguel Antonio (Depto. de Fis. Atom., Mole. y Nucl.-Universidad de Sevilla)

Presenter: CORTES GIRALDO, Miguel Antonio (Depto. de Fis. Atom., Mole. y Nucl.-Universidad de Sevilla)

Contribution ID: 20

Type: **not specified**

Monoenergetic experimental validation of a Geant4 Monte Carlo code for breast dosimetry applications

Thursday, September 21, 2017 11:00 AM (30 minutes)

Primary author: FEDON, Christian (Department of Radiology and Nuclear Medicine, Radboud University Medical Centre)

Presenter: FEDON, Christian (Department of Radiology and Nuclear Medicine, Radboud University Medical Centre)

Contribution ID: 21

Type: **not specified**

A Geant4 study on air gap optimisation for a correction-free silicon diode array detector

Thursday, September 21, 2017 11:30 AM (30 minutes)

Primary author: BIASI, Giordano (CMRP, University of Wollongong)

Presenter: BIASI, Giordano (CMRP, University of Wollongong)

Contribution ID: 22

Type: **not specified**

Feasibility of in-vivo source position verification during high dose rate prostate brachytherapy using a 2D diode array

Thursday, September 21, 2017 12:00 PM (30 minutes)

Joel Poder (CMRP, University of Wollongong and St George Hospital Cancer Care Centre, Kogarah)

Primary author: PODER, Joel (CMRP, University of Wollongong and St George Hospital Cancer Care Centre, Kogarah)

Presenter: PODER, Joel (CMRP, University of Wollongong and St George Hospital Cancer Care Centre, Kogarah)

Contribution ID: 23

Type: **not specified**

Sensitivity analysis of parameters affecting optical photon transport in plastic scintillating fibres using Geant4

Thursday, September 21, 2017 1:30 PM (30 minutes)

Primary author: BLAKE, Samuel (University of Sydney)

Presenter: BLAKE, Samuel (University of Sydney)

Contribution ID: 24

Type: **not specified**

Optimisation of Geant4 simulations for synchrotron-based microbeam radiation therapy

Thursday, September 21, 2017 2:00 PM (30 minutes)

Primary author: CAMERON, Matthew (CMRP, University of Wollongong)

Presenter: CAMERON, Matthew (CMRP, University of Wollongong)

Contribution ID: 26

Type: **not specified**

Geant4 modelling of MRI-guided proton therapy hardware concepts

Friday, September 22, 2017 12:00 PM (30 minutes)

Primary author: OBORN, Bradley (CMRP, University of Wollongong)

Presenter: OBORN, Bradley (CMRP, University of Wollongong)

Contribution ID: 27

Type: **not specified**

Evaluation of silicon based microdosimetry for Boron Neutron Capture Therapy Quality Assurance

Friday, September 22, 2017 12:30 PM (30 minutes)

Primary author: VOHRADSKY , James (CMRP, University of Wollongong)

Presenter: VOHRADSKY , James (CMRP, University of Wollongong)

Contribution ID: 28

Type: **not specified**

Introduction to developing nuclear medicine applications using GATE

Thursday, September 21, 2017 4:00 PM (30 minutes)

Primary author: MALARODA, Alessandra (CMRP, University of Wollongong)

Presenter: MALARODA, Alessandra (CMRP, University of Wollongong)

Contribution ID: 29

Type: **not specified**

GATE Monte Carlo dosimetry simulation of Mars Spectral CT

Thursday, September 21, 2017 4:30 PM (30 minutes)

Primary author: MARFO, Emmanuel (Department of Radiology, University of Otago)

Presenter: MARFO, Emmanuel (Department of Radiology, University of Otago)

Contribution ID: 30

Type: **not specified**

Integration of GATE Monte Carlo-based radionuclide dosimetry as a practical on-line clinical tool

Thursday, September 21, 2017 5:00 PM (30 minutes)

Primary author: JACKSON, Price (Department of Molecular Imaging, Peter MacCallum Cancer Centre)

Presenter: JACKSON, Price (Department of Molecular Imaging, Peter MacCallum Cancer Centre)

Contribution ID: **31**

Type: **not specified**

Social Dinner

Thursday, September 21, 2017 7:00 PM (3 hours)

Contribution ID: 32

Type: **not specified**

Implementation of EM physics for nano scale gold electron simulations

Friday, September 22, 2017 9:00 AM (30 minutes)

Primary author: SAKATA, Dousatsu (University of Bordeaux)

Presenter: SAKATA, Dousatsu (University of Bordeaux)

Contribution ID: 33

Type: **not specified**

Potential implementation of nitrogen, propane and DNA cross sections for electrons and light ions into Geant4-DNA

Friday, September 22, 2017 9:30 AM (30 minutes)

Primary author: NETTELBECK , Heidi (Physikalisch-Technische Bundesanstalt (PTB))

Presenter: NETTELBECK , Heidi (Physikalisch-Technische Bundesanstalt (PTB))

Contribution ID: 34

Type: **not specified**

Geant4 Simulation Study on nanoparticle enhanced Microbeam Radiation Therapy

Friday, September 22, 2017 10:00 AM (30 minutes)

Primary author: ENGELS, Elette (CMRP, University of Wollongong)

Presenter: ENGELS, Elette (CMRP, University of Wollongong)

Contribution ID: 35

Type: **not specified**

Investigation of Geant4-DNA chemical yields and comparison with RITRACKS and experimental observations

Friday, September 22, 2017 11:00 AM (30 minutes)

Primary author: PEUKERT, Dylan (University of South Australia)

Presenter: PEUKERT, Dylan (University of South Australia)

Contribution ID: 36

Type: **not specified**

Understanding radio-enhancement with gadolinium nanoparticles for theranostic use on the Australian MRI-Linac

Thursday, September 21, 2017 2:30 PM (30 minutes)

Primary author: BYRNE , Hilary (University of Sydney)

Presenter: BYRNE , Hilary (University of Sydney)

Contribution ID: 37

Type: **not specified**

Simulation platform for Radionuclide therapy (RNT) and external beam radiotherapy (EBRT) in vitro studies

Friday, September 22, 2017 11:30 AM (30 minutes)

Primary author: GHOLAMI, Yaser (University of Sydney)

Presenter: GHOLAMI, Yaser (University of Sydney)

Contribution ID: 38

Type: **not specified**

Feasibility study of a novel multi-strip silicon detector for use in protontherapy range verification Quality Assurance

Wednesday, September 20, 2017 5:00 PM (30 minutes)

Presenter: MERCHANT, Aaron (Centre For Medical Radiation Physics, University of Wollongong)

Contribution ID: **39**

Type: **not specified**

Student Prize, sponsored by Amentum Pty Ltd

Friday, September 22, 2017 2:00 PM (15 minutes)

Primary author: CORNELIUS, Iwan

Presenter: CORNELIUS, Iwan

Contribution ID: 40

Type: **not specified**

Geant4 Technical Forum & Wrap up

Friday, September 22, 2017 2:15 PM (1h 30m)

Tibor Kibedi, ANU (15 min)

Robin Hill (15 min)

Q&A, Open discuss

Primary authors: ASAI, Makoto (SLAC National Accelerator Laboratory (US)); GUATELLI, Susanna (CMRP, University of Wollongong)

Presenters: ASAI, Makoto (SLAC National Accelerator Laboratory (US)); GUATELLI, Susanna (CMRP, University of Wollongong)

Contribution ID: 41

Type: **not specified**

Tea Break

Contribution ID: 42

Type: **not specified**

The use of TOPAS to determine low energy x-ray backscatter factors

Thursday, September 21, 2017 9:30 AM (30 minutes)

Primary author: HILL, Robin (Chris O'Brien Lifehouse Sydney)

Presenter: HILL, Robin (Chris O'Brien Lifehouse Sydney)

Contribution ID: 43

Type: **not specified**

Geant4 simulations for multidisciplinary and medical applications of laser-driven ion beams

Thursday, September 21, 2017 3:00 PM (30 minutes)

Presenter: ROMANO, Francesco (Universita & INFN, Bari)