

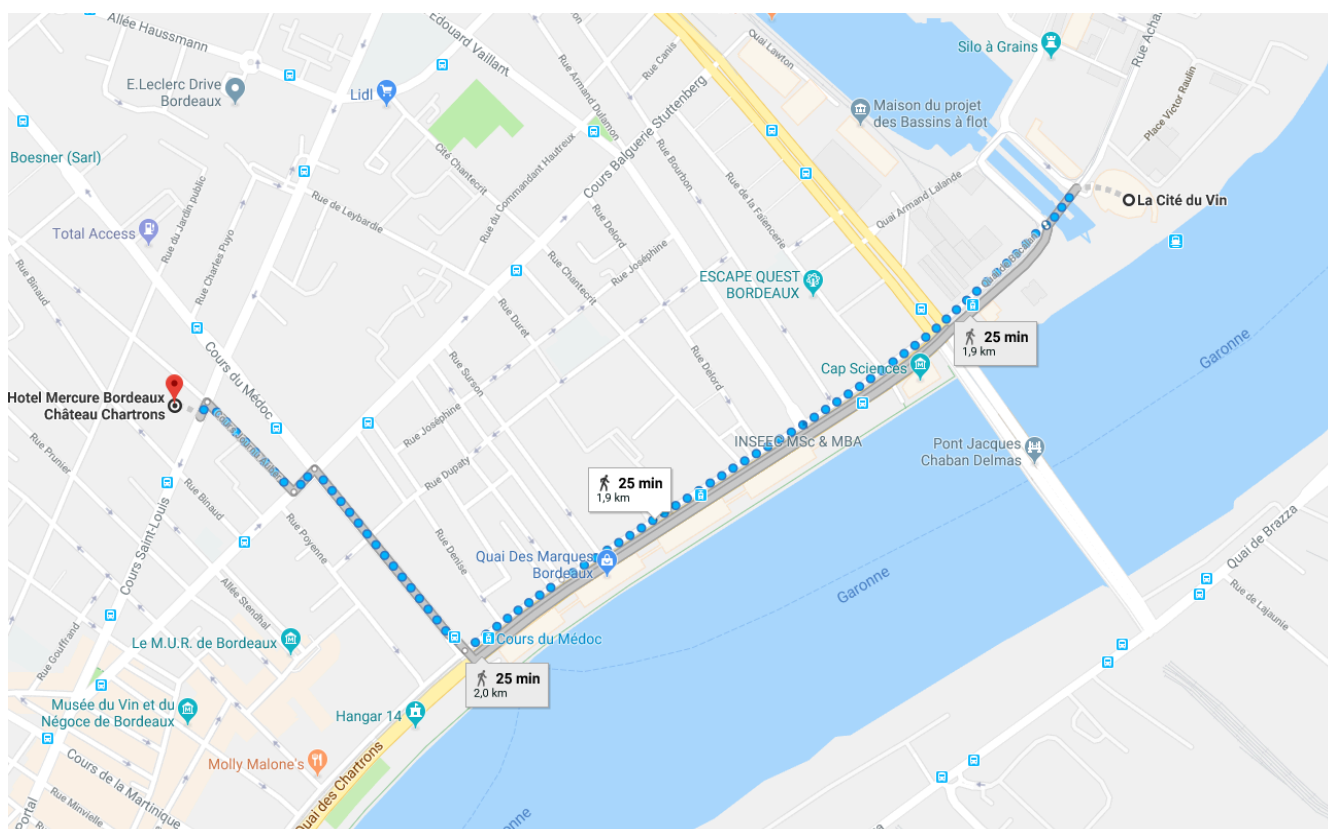
CONFERENCE AGENDA

MONDAY, OCTOBER 29		
8 h – 9 h : Registration		
9 h – 10 h 30 : Opening session		
W1	Welcome from organizers	Organizers
W2	Welcome from new CENBG director	F. Piquemal
W3	Geant4 recent developments (keynote)	M. Asai
W4	Geant4 Physics update (keynote)	V. Ivantchenko
W5	Geant4 low and very low energy Physics update	S. Incerti
10 h 30 – 11 h : Coffee Break		
11 h – 12 h 15 : Session 1 : Geant4 developments 1 (M. Asai, S. Incerti)		
Dev1	Benchmarking Geant4 electron/positron transport against experimental data	M. Novak
Dev2	Geant4 transport of low-energy neutrons and light ions	V. Ivantchenko
Dev3	Implementing elastic scattering of polarized MeV-photons in Geant4	R. Hajima
Dev4	Latest Geant4 developments for PIXE applications	S. Guatelli
Dev5	Auger-electron cascade comparison, in Geant4 and ANU Monte Carlo model	S. Guatelli
12 h 15 – 14 h : Lunch on site		
14 h – 16 h 15 : Session 2 : Geant4 developments 2 (V. Ivantchenko, M. Novak)		
Dev6	Development of a new electron elastic scattering model for Geant4-DNA using ELSEPA for liquid-phase water	W. G. Shin
Dev7	Proton transport with Geant4-DNA above 100 MeV energy limit: Ionization cross sections in liquid water	D. Dominguez-Munoz
Dev8	Total cross sections for the ionization of biological molecules by single electron impact	L. Mouawad
Dev9	Geant4-DNA development: Implementing nitrogen and propane cross sections for electrons and light ions	H. Nettelbeck
Dev10	Determination of water mean ionization potential for Geant4 simulations of proton and helium beams at therapy energies	M. A. Cortes-Giraldo
Dev11	Benchmarking Geant4 hadronic models using proton induced nuclear reaction on a lithium target	A. Secher
Dev12	Validation of Geant4 fragmentation models for therapeutic 4He ion beams	D. Bolst
Dev13	Preliminary results coupling SMF and BLOB with Geant4	C. Mancini Terracciano
Dev14	Status of Geant4 Advanced Examples for medical applications	S. Guatelli
16 h 15 – 16 h 45 : Tea Break		

16 h 45 – 18 h 45 : Session 3 : Imaging & instrumentation 1 (J. Brown, A. Gutierrez)		
Im1	Range verification in proton therapy: Simulation of the LAPD demonstrator and its original approach to in-beam PET ballistic control	A. Bongrand
Im2	Utilising Geant4 in the development of a novel prompt gamma-ray detection system for 3D range verification in proton beam therapy	M. J. Taylor
Im3	Prompt-gamma ray production measurements at the Birmingham MC40 Cyclotron and comparison with Geant4	K. Nikolopoulos
Im4	An extension of the GATE Monte Carlo simulation toolkit to model Compton Camera systems	A. Etxebeste
Im5	Learning SPECT detector response for Monte-Carlo simulations	D. Sarrut
Im6	Performance of Geant4 for SOI microdosimetry in heavy ion therapy	D. Bolst
Im7	Microdosimetry measurements with new 3D-microdetectors in cyclotron beamline	C. Guardiola
Im8	Geant4 simulation of the radiation environment within the International Space Station and the Silicon On Insulator microdosimeter response	S. Peracchi (tbc)
18 h 45 : Adjourn		

TUESDAY, OCTOBER 30		
8 h – 10 h : Session 4 : Imaging & instrumentation 2 (D. Sakata, E. Engels)		
Im9	Monte Carlo simulation of a CMOS sensor for beta particles detection	F. Collamati (tbc)
Im10	Validation of a new detector for CT dosimetry using the GATE simulation toolkit	P. Gillet
Im11	Simulation and experimental validation of a prototype electron beam linear accelerator	P. Lansonneur
Im12	Using Geant4 simulations to setting up the radiobiological experiments in carbon ion beam at U-70	A. Solovov
Im13	A Geant4 model for three-dimensional proton imaging of microscopic samples	C. Michelet
Im14	Dedicated cone-beam breast CT: a patient specific GEANT4 study	A. Sarno
Im15	Geant4 physics list comparison for the simulation of phase-contrast mammography (XPulse project)	V. Beaudoux
Im16	Possibilities of Cancer Treatment by means of 6 J / 1030 nm / 5-10 ns laser TO SESSION 4	L. Sosnovec
10 h – 10 h 30 : Coffee Break		
10 h 30 – 12 h : Session 5 : Nanoparticles (F. Currell, S. Guatelli)		
NP1	Simulation of dose enhancement around Gold-nanoparticles: The importance of electron discrete models in nanometer volumes	D. Sakata
NP2	Study on dose enhancement in lung cancer by small clusters of gold nanoparticles activated by a 6 MeV True Varian linac.	B. Villagomez-Bernabe
NP3	Evaluation of Geant4-DNA physics models for gold nanoparticle radio-enhancement in a clinical KV X-ray radiotherapy field	E. Engels
NP4	On the use of Binary Encounter Approximation model to better estimate absorbed dose and radiolysis yield of gold nanoparticles used as radiosensitizer in protontherapy	F. Hespeels
NP5	Comparison of Monte Carlo simulated physical radiation quantities for gold nanoparticles irradiated by x-rays and assessment of potential indication for targeted breast cancer treatment	W. B. Li
NP6	Monte Carlo simulations on the dose enhancement effect of antibody conjugated gold nanoparticles in targeted radiotherapy on a cellular level	A. Klapproth
12 h – 13 h 30 : Lunch on site		
13 h 30 – 16 h 30 : Session 6 : Protons & hadrons (J. Perl, J. Brown)		
Hadr1	Using TOPAS/Geant4 to simulate daily treatment monitoring based on prompt gamma emission profiles detected during pencil beam scanning proton therapy (keynote)	E. Lens
Hadr2	Geant4 simulation of ion energy loss	V. Ivantchenko
Hadr3	IMPT Plan Delivery Adaption for in-Line Magnetic Field in MR-guided Proton Therapy	L. N. Burigo
Hadr4	Analyzing the effects of Bragg curve degradation due to lung parenchyma in treatment planning	K.-S. Baumann
Hadr5	GATE-RTion as Independent Dose Calculation System for Ion Beam Therapy	L. Grevillot
Hadr6	GATE/Geant4 as a Monte Carlo simulation tool for light ion beam dosimetry	M. Bolsa-Ferruz
Hadr7	Dosimetric studies to guide the preclinical trials in proton minibeam radiotherapy	C. Guardiola
Hadr8	A hybrid method calculating linear energy transfer for intensity modulated proton therapy	X. Ding (tbc)
Hadr9	Implementation and validation of clinical proton beam model in GATE and GPU-accelerated MC code Fred for quality assurance and detector development applications	A. Rucinski (tbc)
Hadr10	Monte Carlo investigation of the radiobiological effect of the nuclear fragments in proton radiotherapy	L. Grzanka
Hadr11	Evaluation of biological effectiveness of 65 MeV therapeutic proton beams using the GATE platform	Y. Ali

Hadr12	Relative Biological Effectiveness (RBE) of a clinical eye proton therapy beam: experiments and Monte Carlo approach	G. Petringa (tbc)
16 h 30 – 17 h : Tea Break		
17 h – 19 h : Session 7 : Tools (M. Asai, I. Kyriakou)		
Tools1	The TOPAS Tool for Particle Simulation: : allowing scientists to focus on creative ideas instead of routine tasks (keynote)	J. Perl (tbc)
Tools2	Code sharing of Monte Carlo beam models for advanced radiotherapy research	A. Guttierrez
Tools3	Start-to-End Accelerator Simulations in Geant4 with BDSIM	L. Nevay
Tools4	Simulation of a Radiobiology Facility for the Centre for the Clinical Application of Particles	A. Kurup
Tools5	Monte Carlo Processing on a Chip (MCoaC)– preliminary experimentations toward the realization of optimal-hardware for TOPAS/Geant4 to drive discovery	A. Saxena
Tools6	A flexible software toolkit for simulating the total dose produced by medical linear accelerators	T. Szumlak (tbc)
Tools7	ICRP Adult Mesh-type Reference Computational Phantoms (MRCPs) and Their Applications Using Geant4	H. Han
Tools8	CPOP: an open-source C++ cell population modeler combined to Geant4 simulations for radiation biology	L. Maigne
19 h : Adjourn		
20 h SHARP : Gala dinner @ La Cité du Vin, "Le 7" Restaurant, 7th floor		



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WEDNESDAY, OCTOBER 31ST		
8h15 – 10h : Session 8 : Radiotherapy & clinical dosimetry 1 (L. Maigne, C. Villagrasa)		
RT1	Accurate Monte Carlo simulation of ¹⁷⁷ Lu therapies with Gate/Geant4: Towards a personalized patient biological-dosimetry	J. Malcolm (tbc)
RT2	Monte Carlo assessment of self and cross-absorbed SAF values using GEANT4 and HDRK-Man Phantom	M. Bhar (tbc)
RT3	Image Based S Voxel Patient Dosimetry in Lung Tissue Following Liver Transarterial Radioembolization	W. A. Dezarn
RT4	GATE Monte Carlo Simulation of Breast Cancer Treatments for the Evaluation of Superficial Dose Calculations	N. Arbor
RT5	Rotational radiotherapy of breast cancer with a polyenergetic kilovoltage X-ray beam: a validated Monte Carlo study	A. Sarno
RT6	Rotational radiotherapy of breast cancer with synchrotron radiation microbeams	A. Sarno
RT7	Monte Carlo simulation of an X18 Varian Clinac 2100C medical linear accelerator using Gate/Geant4 Platform	M. Fiak (tbc)
10 h – 10 h 30 : Coffee Break		
10 h 30 – 11 h 45 : Session 9 : Radiotherapy & clinical dosimetry 2 (E. Lens , D. Sakata)		
RT8	Advancing Advanced Therapies: Simulation and Experiment Pushing Forwards Together (keynote)	F. Currell (tbc)
RT9	Dose enhancement studies in radiation therapy: Geant4 simulations and experimental results	J. Spiga
RT10	Assessment of the organ and effective dose using GEANT4/GATE during CT examinations	M. Mkimel (tbc)
RT11	Modelling and Validation of Monte Carlo Simulation using Geant4 for Kilovoltage X-ray irradiation system	J. I. Shin (tbc)
RT12	Radiation Transport Model for Bone Marrow Dosimetry based on Tessellated Volumes using GATE	M. Salas-Ramirez
11 h 45 – 13 h 30: Lunch on site		
13 h 30 – 15 h 45 : Session 10 : Geant4-DNA & related 1 (I. Kyriakou, T. Sasaki)		
DNA1	Evaluation of ionizing radiation induced early DNA damage on a cell nucleus by integrated track structure Monte Carlo simulations using Geant4-DNA (keynote)	D. Sakata
DNA2	Modeling indirect radiation damage on DNA with the GEANT4-DNA toolkit	M. A. Bernal
DNA3	Benchmark on Monte Carlo calculations for micro- and nanodosimetry: assessing the contribution of cross-sections to the results' uncertainty	C. Villagrasa
DNA4	Influence of chromatin compaction on simulated early radiation-induced DNA damage using Geant4-DNA	N. Tang
DNA5	TOPAS-nBio as a tool to facilitate Geant4-DNA's experimental comparison for radiolysis simulations	J. Ramos-Mendez
DNA6	Radiation-induced plasmid DNA damage in relation to DNA length and high level molecular structure	V. Stepan
DNA7	Correlating microdosimetric simulations with in cellulo radiation-induced spatiotemporal dynamics of GFP-tagged DNA repair proteins	E. Torfeh
DNA8	Geant4-DNA investigation of radionuclide loaded nano-carrier induced DNA damage at the sub-cellular scale	G. Tany (tbc)
DNA9	Influence of track structure and condensed history physics models of Geant4 to nanoscale electron transport in liquid water (keynote)	I. Kyriakou
15 h 45 – 16 h 15 : Tea break		

16 h 15 – 18 h 30 : Session 11 : Geant4-DNA & related 2 (J. Brown, S. Incerti)		
DNA10	A GPU-based Monte Carlo simulator “MPEXS” and its extension (keynote)	S. Okada (tbc)
DNA11	New methods for the Linear Energy Transfer (LET) and Relative Biological Effectiveness (RBE) calculation by using Geant4 Monte Carlo code	G. Petringa (tbc)
DNA12	Biologically Relevant Predictions for Proton Beam Therapy from In-Silico Modelling and the Relevance to Treatment Planning	E. A. K. Smith (tbc)
DNA13	Microdosimetry-based dose-average linear energy transfer calculation for clinical proton beams: A Monte Carlo study with Geant4-DNA	A. Baratto-Roldan
DNA14	The study of energy distribution of the particles at the same depth using Geant4-DNA simulation	P. Thongjerm
DNA15	DaMaRiS: An In Silico Model of DNA Repair for Investigation of Mechanisms in Non-Homologous End Joining	J. Warmenhoven
DNA16	Application of Monte Carlo Simulations to Sub-cellular Localization of Gold Nanoparticles for Radiosensitization	M. Aliru (tbc)
DNA17	Integrated Spatial and Temporal Stochastic Model in Radiation Biology: Design, Implementation, and Application	R. Liu
DNA18	Geant4-DNA investigation of the FLASH effect	L. Desorgher
18 h 30 : adjourn		