

# Geant4 21st Collaboration Meeting



## Report of Contributions

Contribution ID: 0

Type: **not specified**

## **New developments of MicroElec processes for low-energy electron transport in Al, Ag and Si**

*Tuesday, September 13, 2016 2:30 PM (15 minutes)*

**Presenter:** Dr INGUIMBERT, Christophe

**Session Classification:** Parallel 3A - New EM developments

Contribution ID: 1

Type: **not specified**

## **Evaluation of radio-induced DNA damages simulating the physical, physico-chemical and chemical stages with Geant4-DNA**

*Tuesday, September 13, 2016 3:30 PM (15 minutes)*

**Presenter:** Mr MEYLAN, Sylvain

**Session Classification:** Parallel 3A - New EM developments

Contribution ID: 2

Type: **not specified**

## **A Geant4 application for flexible and extendable DNA geometries incorporating physical and chemical genome damage**

*Tuesday, September 13, 2016 3:15 PM (15 minutes)*

**Presenter:** LAMPE, Nathanael

**Session Classification:** Parallel 3A - New EM developments

Contribution ID: 3

Type: **not specified**

## **Recent activities for low energy EM physics**

*Tuesday, September 13, 2016 9:30 AM (30 minutes)*

**Presenter:** Dr INCERTI, SEBASTIEN (CNRS/IN2P3/CENBG)

**Session Classification:** Plenary 3 - Physics part 1

Contribution ID: 4

Type: **not specified**

## **Firsov and Remizovich effects for low energy low angle proton scattering simulation**

*Tuesday, September 13, 2016 2:00 PM (15 minutes)*

**Presenters:** Dr MANTERO, Alfonso (INFN); Dr DONDERO, Paolo (SWHARD)

**Session Classification:** Parallel 3A - New EM developments

Contribution ID: 5

Type: **not specified**

## Status of Multi-Threading

*Thursday, September 15, 2016 11:00 AM (15 minutes)*

**Presenters:** DOTTI, Andrea; DOTTI, Andrea (SLAC National Accelerator Laboratory)

**Session Classification:** Plenary 7 - Updates on kernel, geometry, MT/MPI

Contribution ID: 6

Type: **not specified**

## Geometry Update

*Thursday, September 15, 2016 11:15 AM (15 minutes)*

**Presenter:** Dr COSMO, Gabriele (CERN, Geneva)

**Session Classification:** Plenary 7 - Updates on kernel, geometry, MT/MPI



Contribution ID: 7

Type: **not specified**

## Kernel Updates

*Thursday, September 15, 2016 11:30 AM (15 minutes)*

**Primary author:** DOTTI, Andrea (SLAC National Accelerator Laboratory)

**Presenter:** DOTTI, Andrea (SLAC National Accelerator Laboratory)

**Session Classification:** Plenary 7 - Updates on kernel, geometry, MT/MPI

Contribution ID: 8

Type: **not specified**

## Crystal Concept Extension to Geant4

*Thursday, September 15, 2016 11:45 AM (10 minutes)*

**Primary author:** BAGLI, Enrico (FE)

**Presenter:** BAGLI, Enrico (FE)

**Session Classification:** Plenary 7 - Updates on kernel, geometry, MT/MPI

Contribution ID: 9

Type: **not specified**

## Geant4 at Extreme Scales

*Thursday, September 15, 2016 11:55 AM (25 minutes)*

**Primary author:** LCOMPTE, Tom (Argonne National Laboratory)

**Presenter:** LCOMPTE, Tom (Argonne National Laboratory)

**Session Classification:** Plenary 7 - Updates on kernel, geometry, MT/MPI

Contribution ID: **10**

Type: **not specified**

## **Discussion**

*Thursday, September 15, 2016 12:20 PM (10 minutes)*

**Session Classification:** Plenary 7 - Updates on kernel, geometry, MT/MPI

Contribution ID: 11

Type: **not specified**

## **Progress in EM standard**

*Tuesday, September 13, 2016 9:00 AM (30 minutes)*

**Presenter:** Prof. IVANTCHENKO, Vladimir (CERN)

**Session Classification:** Plenary 3 - Physics part 1

Contribution ID: 12

Type: **not specified**

## **New evaluated PIXE model from ANSTO**

*Tuesday, September 13, 2016 2:15 PM (15 minutes)*

**Presenter:** Dr GUATELLI, Susanna (Centre For Medical Radiation Physics, University of Wollongong)

**Session Classification:** Parallel 3A - New EM developments

Contribution ID: 13

Type: **not specified**

## **LHC and other HEP energy frontier experiments**

**Presenter:** RIBON, Alberto (CERN)

Contribution ID: 14

Type: **not specified**

## **HEP intensity and cosmic frontier experiments**

**Presenter:** Dr HATCHER, Robert (Fermilab)



Contribution ID: 15

Type: **not specified**

## Nuclear physics domain

**Presenter:** Prof. SARMIENTO, Juan Arturo (NASA/ESA-Fellowship-stemming PhD Programme (Multipartnership-oriented: NASA/ESA/NIH/Karolinska I.-Nobel Foundation/Stockholm U./U. Nice--Sofia-Antipolis/A.E.I. MPG/Cambridge U./U. La Sorbonne-Cite/U. Radboud-Nijmegen/Others))

Contribution ID: 16

Type: **not specified**

## **LHC and other HEP energy frontier experiments**

*Monday, September 12, 2016 9:15 AM (12 minutes)*

**Presenter:** RIBON, Alberto (CERN)

**Session Classification:** Plenary 1 - Opening addresses / open requirements

Contribution ID: 17

Type: **not specified**

## **HEP intensity and cosmic frontier experiments**

*Monday, September 12, 2016 9:27 AM (12 minutes)*

**Presenter:** Dr HATCHER, Robert (Fermilab)

**Session Classification:** Plenary 1 - Opening addresses / open requirements

Contribution ID: **18**

Type: **not specified**

## **Nuclear physics domain**

*Monday, September 12, 2016 9:39 AM (12 minutes)*

**Presenter:** Dr SARMIENTO, Luis (Lund University)

**Session Classification:** Plenary 1 - Opening addresses / open requirements

Contribution ID: **19**

Type: **not specified**

## Space domain

*Monday, September 12, 2016 9:51 AM (12 minutes)*

**Presenter:** Dr SANTIN, Giovanni (ESA / ESTEC)

**Session Classification:** Plenary 1 - Opening addresses / open requirements

Contribution ID: 20

Type: **not specified**

## Medical domain

*Monday, September 12, 2016 10:03 AM (12 minutes)*

**Presenter:** Dr GUATELLI, Susanna (Centre For Medical Radiation Physics, University of Wollongong)

**Session Classification:** Plenary 1 - Opening addresses / open requirements

Contribution ID: 21

Type: **not specified**

## **Material science and security application domains**

*Monday, September 12, 2016 10:15 AM (12 minutes)*

**Presenter:** BAGLI, Enrico (FE)

**Session Classification:** Plenary 1 - Opening addresses / open requirements

Contribution ID: 22

Type: **not specified**

## Welcome

*Monday, September 12, 2016 9:00 AM (10 minutes)*

**Presenter:** BETTONI, Diego (FE)

**Session Classification:** Plenary 1 - Opening addresses / open requirements



Contribution ID: 23

Type: **not specified**

## Opening remarks

*Monday, September 12, 2016 9:10 AM (5 minutes)*

**Presenter:** Dr ASAI, Makoto (SLAC National accelerator Laboratory)

**Session Classification:** Plenary 1 - Opening addresses / open requirements

Contribution ID: 24

Type: **not specified**

## Report on parallel session 1A

*Friday, September 16, 2016 11:00 AM (7 minutes)*

**Presenters:** DOTTI, Andrea; DOTTI, Andrea (SLAC National Accelerator Laboratory)

**Session Classification:** Plenary 8 - Report from parallel sessions

Contribution ID: 25

Type: **not specified**

## **Report on parallel session 1B**

*Friday, September 16, 2016 11:07 AM (7 minutes)*

**Presenters:** Dr ALLISON, John (Geant4 Associates International Ltd); Mr GARNIER, Laurent (OSUR / CNRS)

**Session Classification:** Plenary 8 - Report from parallel sessions

Contribution ID: 26

Type: **not specified**

## Report on parallel session 2A

*Friday, September 16, 2016 11:14 AM (7 minutes)*

**Presenters:** Prof. FADDEGON, Bruce (UCSF); Dr GUATELLI, Susanna (Centre For Medical Radiation Physics, University of Wollongong)

**Session Classification:** Plenary 8 - Report from parallel sessions

Contribution ID: 27

Type: **not specified**

## **Report on parallel session 2B**

*Friday, September 16, 2016 11:21 AM (7 minutes)*

**Presenters:** BAGLI, Enrico (FE); VERDERI, Marc (LLR, Ecole polytechnique)

**Session Classification:** Plenary 8 - Report from parallel sessions

Contribution ID: 28

Type: **not specified**

## Report on parallel session 3A

*Friday, September 16, 2016 11:28 AM (7 minutes)*

**Presenters:** Dr NOVAK, Mihaly (CERN); Dr INCERTI, SEBASTIEN (CNRS/IN2P3/CENBG)

**Session Classification:** Plenary 8 - Report from parallel sessions

Contribution ID: 29

Type: **not specified**

## **Report on parallel session 3B**

*Friday, September 16, 2016 11:35 AM (7 minutes)*

**Presenters:** Dr FOLGER, Gunter (CERN - PH/SFT); JUN, Soon Yung (Fermilab)

**Session Classification:** Plenary 8 - Report from parallel sessions

Contribution ID: **30**

Type: **not specified**

## **Report on parallel session 4A**

*Friday, September 16, 2016 11:42 AM (7 minutes)*

**Presenters:** Dr PANDOLA, Luciano (LNS); Dr GUATELLI, Susanna (Centre For Medical Radiation Physics, University of Wollongong)

**Session Classification:** Plenary 8 - Report from parallel sessions



Contribution ID: **31**

Type: **not specified**

## **Report on parallel session 4B**

*Friday, September 16, 2016 11:49 AM (7 minutes)*

**Presenter:** HRIVNACOVA, Ivana (IPN Orsay, CNRS)

**Session Classification:** Plenary 8 - Report from parallel sessions

Contribution ID: **32**

Type: **not specified**

## **Report on parallel session 5A**

*Friday, September 16, 2016 11:56 AM (7 minutes)*

**Presenter:** Dr WENZEL, Hans (FNAL)

**Session Classification:** Plenary 8 - Report from parallel sessions

Contribution ID: 33

Type: **not specified**

## **Report on parallel session 5B**

*Friday, September 16, 2016 12:03 PM (7 minutes)*

**Presenters:** Dr HOWARD, Alexander (ETH Zürich); VERDERI, Marc (LLR, Ecole polytechnique)

**Session Classification:** Plenary 8 - Report from parallel sessions

Contribution ID: **34**

Type: **not specified**

## **Report on parallel session 6A**

*Friday, September 16, 2016 12:10 PM (7 minutes)*

**Presenters:** RIBON, Alberto (CERN); GENSER, Krzysztof (Fermilab)

**Session Classification:** Plenary 8 - Report from parallel sessions

Contribution ID: 35

Type: **not specified**

## **Report on parallel session 6B**

*Friday, September 16, 2016 12:17 PM (7 minutes)*

**Presenters:** DOTTL, Andrea; Dr MORGAN, Ben (University of Warwick)

**Session Classification:** Plenary 8 - Report from parallel sessions

Contribution ID: 36

Type: **not specified**

## Report on parallel session 7A

*Friday, September 16, 2016 2:00 PM (7 minutes)*

**Presenters:** RIBON, Alberto (CERN); Dr YARBA, Julia (Fermilab); GENSER, Krzysztof (Fermilab)

**Session Classification:** Plenary 9 - Report from parallel sessions / Closing session

Contribution ID: 37

Type: **not specified**

## Report on parallel session 7B

*Friday, September 16, 2016 2:07 PM (7 minutes)*

**Presenters:** Dr COSMO, Gabriele (CERN, Geneva); Dr APOSTOLAKIS, John (CERN)

**Session Classification:** Plenary 9 - Report from parallel sessions / Closing session

Contribution ID: **38**

Type: **not specified**

## **Report on parallel session 8A**

*Friday, September 16, 2016 2:14PM (7 minutes)*

**Presenters:** RIBON, Alberto (CERN); Dr WRIGHT, Dennis (SLAC)

**Session Classification:** Plenary 9 - Report from parallel sessions / Closing session



Contribution ID: 39

Type: **not specified**

## **Report on parallel session 8B**

*Friday, September 16, 2016 2:21 PM (7 minutes)*

**Presenters:** Dr APOSTOLAKIS, John (CERN); JUN, Soon Yung (Fermilab)

**Session Classification:** Plenary 9 - Report from parallel sessions / Closing session

Contribution ID: 40

Type: **not specified**

## Release schedule

*Friday, September 16, 2016 2:28 PM (15 minutes)*

**Presenter:** Dr COSMO, Gabriele (CERN, Geneva)

**Session Classification:** Plenary 9 - Report from parallel sessions / Closing session

Contribution ID: 41

Type: **not specified**

## Collaboration-wide efforts

*Friday, September 16, 2016 2:43 PM (20 minutes)*

**Presenters:** Dr ASAI, Makoto (SLAC National accelerator Laboratory); VERDERI, Marc (LLR, Ecole polytechnique)

**Session Classification:** Plenary 9 - Report from parallel sessions / Closing session

Contribution ID: 42

Type: **not specified**

## Next collaboration meeting

*Friday, September 16, 2016 3:03 PM (12 minutes)*

**Presenter:** Dr GUATELLI, Susanna (Centre For Medical Radiation Physics, University of Wollongong)

**Session Classification:** Plenary 9 - Report from parallel sessions / Closing session

Contribution ID: 43

Type: **not specified**

## Closing remarks

*Friday, September 16, 2016 3:15 PM (15 minutes)*

**Presenter:** Dr ASAI, Makoto (SLAC National accelerator Laboratory)

**Session Classification:** Plenary 9 - Report from parallel sessions / Closing session

Contribution ID: 44

Type: **not specified**

## **MPEXS-DNA, a GPU implementation of Geant4-DNA**

*Tuesday, September 13, 2016 3:00 PM (15 minutes)*

**Presenter:** Dr OKADA, Shogo

**Session Classification:** Parallel 3A - New EM developments

Contribution ID: 45

Type: **not specified**

## **Flagged uniform particle split for Geant4-DNA**

*Tuesday, September 13, 2016 2:45 PM (15 minutes)*

**Presenter:** Dr RAMOS-MENDEZ, Jose

**Session Classification:** Parallel 3A - New EM developments

Contribution ID: 46

Type: **not specified**

## **G4CMP – Geant4 add-on framework for phonon and charge-carrier physics**

*Monday, September 12, 2016 4:00 PM (30 minutes)*

**Presenters:** Dr KELSEY, Michael (SLAC); AGNESE, Rob (University of Florida)

**Session Classification:** Parallel 2B - Crystals and solid state processes



Contribution ID: 47

Type: **not specified**

## **NCrystal - Modelling scattering of low-energy neutrons in poly- and single-crystals**

*Monday, September 12, 2016 4:30 PM (30 minutes)*

**Presenter:** Dr CAI, Xiao-Xiao (European Spallation Source ERIC/Technical University of Denmark)

**Session Classification:** Parallel 2B - Crystals and solid state processes

Contribution ID: 48

Type: **not specified**

## Channeling in Geant4

*Monday, September 12, 2016 5:00 PM (15 minutes)*

**Presenter:** BAGLI, Enrico (FE)

**Session Classification:** Parallel 2B - Crystals and solid state processes

Contribution ID: 49

Type: **not specified**

## Discussion

*Monday, September 12, 2016 5:15 PM (15 minutes)*

**Session Classification:** Parallel 2B - Crystals and solid state processes

Contribution ID: 50

Type: **not specified**

## **Electron backscattering test**

**Presenters:** Dr MANTERO, Alfonso; Dr DONDERO, Paolo

Contribution ID: 51

Type: **not specified**

## **Validation and tuning of the fluctuation model**

**Presenter:** Dr URBAN, Laszlo

Contribution ID: 52

Type: **not specified**

## **Ion range validation in water**

*Tuesday, September 13, 2016 4:55 PM (15 minutes)*

**Presenter:** PERALES, Alvaro

**Session Classification:** Parallel 4A - New EM physics validation results

Contribution ID: 53

Type: **not specified**

## **Bragg curves in water for 67.5 MeV protons**

*Tuesday, September 13, 2016 4:30 PM (15 minutes)*

**Presenter:** Prof. FADDEGON, Bruce (UCSF)

**Session Classification:** Parallel 4A - New EM physics validation results

Contribution ID: 54

Type: **not specified**

## **Validation of proton nozzle**

*Tuesday, September 13, 2016 4:45 PM (10 minutes)*

**Presenter:** Mr SHIN, Jae-ik (KIRAMS,NCC)

**Session Classification:** Parallel 4A - New EM physics validation results



Contribution ID: 55

Type: **not specified**

## **Neutron yield from different targets for protons below 300 MeV**

**Presenter:** TBA

Contribution ID: 56

Type: **not specified**

## **New data on fragmentation cross sections of alpha particles in water from GSI**

*Tuesday, September 13, 2016 5:10 PM (15 minutes)*

**Presenter:** Dr CORTES-GIRALDO, Miguel Antonio (Universidad de Sevilla)

**Session Classification:** Parallel 4A - New EM physics validation results

Contribution ID: 57

Type: **not specified**

## Discussion on Physics List category

*Monday, September 12, 2016 2:40 PM (30 minutes)*

**Presenter:** Dr FOLGER, Gunter (CERN - PH/SFT)

**Session Classification:** Parallel 1A - Physics List and validation tools

Contribution ID: 58

Type: **not specified**

## Physics List Factory

*Monday, September 12, 2016 2:00 PM (20 minutes)*

**Presenter:** Dr HATCHER, Robert (Fermilab)

**Session Classification:** Parallel 1A - Physics List and validation tools

Contribution ID: 59

Type: **not specified**

## **Statistical Testing for validation: status and plan**

*Monday, September 12, 2016 2:30 PM (10 minutes)*

**Presenters:** DOTTI, Andrea; DOTTI, Andrea (SLAC National Accelerator Laboratory)

**Session Classification:** Parallel 1A - Physics List and validation tools

Contribution ID: **60**

Type: **not specified**

## **Special Purpose tools for validation**

*Monday, September 12, 2016 2:20 PM (10 minutes)*

**Presenter:** Dr YARBA, Julia (Fermilab)

**Session Classification:** Parallel 1A - Physics List and validation tools

Contribution ID: **61**

Type: **not specified**

## **Medical Validation Testing suite: technical details**

*Monday, September 12, 2016 3:10 PM (20 minutes)*

**Presenters:** DOTTI, Andrea; DOTTI, Andrea (SLAC National Accelerator Laboratory)

**Session Classification:** Parallel 1A - Physics List and validation tools

Contribution ID: **62**

Type: **not specified**

## Status of DoSSiER

*Wednesday, September 14, 2016 9:00 AM (20 minutes)*

**Presenter:** Dr WENZEL, Hans (FNAL)

**Session Classification:** Parallel 5A - Dossier : Database of Scientific Simulation and Experimental Results: Development and Status



Contribution ID: **63**

Type: **not specified**

## Status of python uploader

*Wednesday, September 14, 2016 9:20 AM (10 minutes)*

**Presenters:** DOTTI, Andrea; DOTTI, Andrea (SLAC National Accelerator Laboratory)

**Session Classification:** Parallel 5A - Dossier : Database of Scientific Simulation and Experimental Results: Development and Status

Contribution ID: **64**

Type: **not specified**

## **Status of C++ interface**

*Wednesday, September 14, 2016 9:30 AM (10 minutes)*

**Primary author:** KONSTANTINOV, Dmitry (CERN/IHEP)

**Presenter:** KONSTANTINOV, Dmitry (CERN/IHEP)

**Session Classification:** Parallel 5A - Dossier : Database of Scientific Simulation and Experimental Results: Development and Status

Contribution ID: 65

Type: **not specified**

## **Demo: from running a test to displaying the results**

*Wednesday, September 14, 2016 9:40 AM (30 minutes)*

**Presenters:** Dr WENZEL, Hans (FNAL); Dr YARBA, Julia (Fermilab)

**Session Classification:** Parallel 5A - Dossier : Database of Scientific Simulation and Experimental Results: Development and Status

Contribution ID: **66**

Type: **not specified**

## **Validation of Geant4 for brachytherapy - new test**

**Presenter:** Dr GUATELLI, Susanna (Centre For Medical Radiation Physics, University of Wollongong)

Contribution ID: 67

Type: **not specified**

## **Validation of photon cross sections and a new test for brachytherapy**

*Tuesday, September 13, 2016 4:15 PM (15 minutes)*

**Presenter:** Dr GUATELLI, Susanna (Centre For Medical Radiation Physics, University of Wollongong)

**Session Classification:** Parallel 4A - New EM physics validation results

Contribution ID: **68**

Type: **not specified**

## **Introduction to the session**

*Monday, September 12, 2016 4:00 PM (2 minutes)*

**Primary author:** Prof. FADDEGON, Bruce (UCSF)

**Presenter:** Prof. FADDEGON, Bruce (UCSF)

**Session Classification:** Parallel 2A - EM physics validation for medical use

Contribution ID: 69

Type: **not specified**

## **Neutron yield from different targets for protons below 300 MeV**

*Monday, September 12, 2016 4:02 PM (12 minutes)*

**Presenter:** Dr RAMOS MENDEZ, Jose (University of California San Francisco)

**Session Classification:** Parallel 2A - EM physics validation for medical use

Contribution ID: 70

Type: **not specified**

## **C-12 ion fragmentation validation**

*Monday, September 12, 2016 4:14 PM (12 minutes)*

**Presenter:** Dr GUATELLI, Susanna (Centre For Medical Radiation Physics, University of Wollongong)

**Session Classification:** Parallel 2A - EM physics validation for medical use



Contribution ID: 71

Type: **not specified**

## Electron scattering test results

*Monday, September 12, 2016 4:26 PM (12 minutes)*

**Primary authors:** MANTERO, Alfonso (INFN); Dr DONDERO, Paolo (SWHARD)

**Presenters:** MANTERO, Alfonso (INFN); Dr DONDERO, Paolo (SWHARD)

**Session Classification:** Parallel 2A - EM physics validation for medical use

Contribution ID: 72

Type: **not specified**

## **Electron scattering from foils at 13-20 MeV**

*Monday, September 12, 2016 4:38 PM (10 minutes)*

**Presenter:** Prof. FADDEGON, Bruce (UCSF)

**Session Classification:** Parallel 2A - EM physics validation for medical use

Contribution ID: 73

Type: **not specified**

## **Bremsstrahlung from thick targets at radiotherapy energies**

*Monday, September 12, 2016 4:48 PM (10 minutes)*

**Presenter:** Prof. FADDEGON, Bruce (UCSF)

**Session Classification:** Parallel 2A - EM physics validation for medical use

Contribution ID: 74

Type: **not specified**

## **Comparison of the Geant4 electromagnetic models for a gamma linac radiotherapy simulation**

*Monday, September 12, 2016 4:58 PM (12 minutes)*

**Presenter:** Mr ARCE, Pedro (CIEMAT)

**Session Classification:** Parallel 2A - EM physics validation for medical use

Contribution ID: 75

Type: **not specified**

## **A new utility to read DICOM data in Geant4**

*Monday, September 12, 2016 5:10 PM (12 minutes)*

**Presenter:** Mr ARCE, Pedro (CIEMAT)

**Session Classification:** Parallel 2A - EM physics validation for medical use

Contribution ID: 76

Type: **not specified**

## **Update on USolids/VecGeom integration in Geant4**

*Thursday, September 15, 2016 4:15 PM (15 minutes)*

**Presenter:** Dr COSMO, Gabriele (CERN, Geneva)

**Session Classification:** Parallel 7B - Geometry working session

Contribution ID: 77

Type: **not specified**

## **New magnetic-field steppers classes**

*Thursday, September 15, 2016 4:30 PM (15 minutes)*

**Presenter:** Dr APOSTOLAKIS, John (CERN)

**Session Classification:** Parallel 7B - Geometry working session

Contribution ID: 78

Type: **not specified**

## **Review of open issues**

*Thursday, September 15, 2016 5:00 PM (15 minutes)*

**Session Classification:** Parallel 7B - Geometry working session



Contribution ID: 79

Type: **not specified**

## Discussion

*Thursday, September 15, 2016 5:15 PM (15 minutes)*

**Session Classification:** Parallel 7B - Geometry working session

Contribution ID: **80**

Type: **not specified**

## Recent updates to VecGeom

*Thursday, September 15, 2016 4:00 PM (15 minutes)*

**Presenter:** Dr WENZEL, Sandro (CERN)

**Session Classification:** Parallel 7B - Geometry working session

Contribution ID: **81**

Type: **not specified**

## **Use of C++11 in Geant4, an update**

*Wednesday, September 14, 2016 11:00 AM (20 minutes)*

**Presenter:** HRIVNACOVA, Ivana (IPN Orsay, CNRS)

**Session Classification:** Plenary 5 - Tools (Drupal, Git, etc.)

Contribution ID: 82

Type: **not specified**

## **DoSSiER: Database of Scientific Simulation and Experimental Results: Overview and Status of the Project**

*Wednesday, September 14, 2016 11:20 AM (20 minutes)*

**Presenter:** Dr WENZEL, Hans (FNAL)

**Session Classification:** Plenary 5 - Tools (Drupal, Git, etc.)

Contribution ID: **83**

Type: **not specified**

## **Code improvement: Coverity static analysis, valgrind dynamic analysis**

*Wednesday, September 14, 2016 11:40 AM (15 minutes)*

**Presenter:** Dr COSMO, Gabriele (CERN, Geneva)

**Session Classification:** Plenary 5 - Tools (Drupal, Git, etc.)

Contribution ID: **84**

Type: **not specified**

## **Use of git for releases and ideas for development**

*Wednesday, September 14, 2016 11:55 AM (20 minutes)*

**Presenter:** Dr MORGAN, Ben (University of Warwick)

**Session Classification:** Plenary 5 - Tools (Drupal, Git, etc.)

Contribution ID: **85**

Type: **not specified**

## **Migration to Drupal: status**

**Presenter:** Dr FOLGER, Gunter (CERN - PH/SFT)

Contribution ID: **86**

Type: **not specified**

## **Highlights of Low Energy Hadronic Physics**

*Tuesday, September 13, 2016 11:00 AM (26 minutes)*

**Presenter:** Dr LUIS, Sarmiento (Lund University)

**Session Classification:** Plenary 4 - Physics part 2



Contribution ID: 87

Type: **not specified**

## **Status and Plans of Hadronic Validation**

*Tuesday, September 13, 2016 11:26 AM (26 minutes)*

**Presenter:** Dr WRIGHT, Dennis (SLAC)

**Session Classification:** Plenary 4 - Physics part 2

Contribution ID: **88**

Type: **not specified**

## **Model Parameter Variation Project**

*Tuesday, September 13, 2016 11:52 AM (26 minutes)*

**Presenter:** Dr YARBA, Julia (Fermilab)

**Session Classification:** Plenary 4 - Physics part 2

Contribution ID: **89**

Type: **not specified**

## **Neutron validation at CEA**

*Friday, September 16, 2016 9:00 AM (15 minutes)*

**Presenter:** Dr TRAN, Hoang (CEA)

**Session Classification:** Parallel 8A - Low-energy Hadronic Physics

Contribution ID: **90**

Type: **not specified**

## **Update of Data-driven Low Energy Nuclear Models**

*Friday, September 16, 2016 9:15 AM (15 minutes)*

**Presenter:** Dr KOI, Tatsumi (SLAC National Accelerator Laboratory)

**Session Classification:** Parallel 8A - Low-energy Hadronic Physics

Contribution ID: **91**

Type: **not specified**

## **Progress on the TRIPOLI-4/Geant4 Coupling**

*Friday, September 16, 2016 9:30 AM (15 minutes)*

**Presenter:** Dr MANCUSI, Davide (CEA-Saclay)

**Session Classification:** Parallel 8A - Low-energy Hadronic Physics

Contribution ID: 92

Type: **not specified**

## Discussion

*Friday, September 16, 2016 9:45 AM (45 minutes)*

**Session Classification:** Parallel 8A - Low-energy Hadronic Physics

Contribution ID: 93

Type: **not specified**

## **Quantized state system method for the field integration**

*Thursday, September 15, 2016 4:45 PM (15 minutes)*

**Presenters:** Mr SANTI, Lucio; JUN, Soon Yung (Fermilab)

**Session Classification:** Parallel 7B - Geometry working session

Contribution ID: 94

Type: **not specified**

## **WG work plan status**

*Tuesday, September 13, 2016 4:00 PM (30 minutes)*

**Presenter:** HRIVNACOVA, Ivana (IPN Orsay, CNRS)

**Session Classification:** Parallel 4B - Basic and Extended Examples



Contribution ID: 95

Type: **not specified**

## **New hadronic examples: Hadr07, AmBe**

*Tuesday, September 13, 2016 4:30 PM (5 minutes)*

**Presenter:** MAIRE, Michel

**Session Classification:** Parallel 4B - Basic and Extended Examples

Contribution ID: 96

Type: **not specified**

## **New medical/dna/chem4 example**

*Tuesday, September 13, 2016 4:35 PM (5 minutes)*

**Presenter:** KARAMITOS, Mathieu

**Session Classification:** Parallel 4B - Basic and Extended Examples

Contribution ID: 97

Type: **not specified**

## **New monitoring example**

*Tuesday, September 13, 2016 4:40 PM (10 minutes)*

**Presenters:** DOTTI, Andrea; DOTTI, Andrea (SLAC National Accelerator Laboratory)

**Session Classification:** Parallel 4B - Basic and Extended Examples

Contribution ID: 98

Type: **not specified**

## **Discussion about parameters and integration of hits and analysis frameworks**

*Tuesday, September 13, 2016 4:50 PM (30 minutes)*

**Presenters:** DOTTI, Andrea; HRIVNACOVA, Ivana (IPN Orsay, CNRS)

**Session Classification:** Parallel 4B - Basic and Extended Examples

Contribution ID: 99

Type: **not specified**

## Visualization and GUIs

*Thursday, September 15, 2016 9:00 AM (20 minutes)*

**Presenter:** Mr GARNIER, Laurent (OSUR / CNRS)

**Session Classification:** Plenary 6 - Updates on GUI, Vis, Analysis, examples

Contribution ID: **100**

Type: **not specified**

## **Analysis and g4tools**

*Thursday, September 15, 2016 9:20 AM (20 minutes)*

**Presenters:** BARRAND, Guy; HRIVNACOVA, Ivana (IPN Orsay, CNRS)

**Session Classification:** Plenary 6 - Updates on GUI, Vis, Analysis, examples

Contribution ID: **101**

Type: **not specified**

## **Geant4Py**

*Thursday, September 15, 2016 9:40 AM (20 minutes)*

**Presenter:** Dr MURAKAMI, Koichi (KEK)

**Session Classification:** Plenary 6 - Updates on GUI, Vis, Analysis, examples

Contribution ID: **102**

Type: **not specified**

## **Basic & Extended Examples**

*Thursday, September 15, 2016 10:00 AM (15 minutes)*

**Presenter:** HRIVNACOVA, Ivana (IPN Orsay, CNRS)

**Session Classification:** Plenary 6 - Updates on GUI, Vis, Analysis, examples



Contribution ID: **103**

Type: **not specified**

## **Advanced Examples**

*Thursday, September 15, 2016 10:15 AM (15 minutes)*

**Presenter:** Dr PANDOLA, Luciano (LNS)

**Session Classification:** Plenary 6 - Updates on GUI, Vis, Analysis, examples

Contribution ID: **104**

Type: **not specified**

## **Highlights of hadronic physics for HEP**

*Tuesday, September 13, 2016 10:00 AM (30 minutes)*

**Presenter:** RIBON, Alberto (CERN)

**Session Classification:** Plenary 3 - Physics part 1

Contribution ID: **105**

Type: **not specified**

## **New physics lists examples category (to be confirmed)**

**Presenters:** DOTTI, Andrea; Dr FOLGER, Gunter (CERN - PH/SFT)

Contribution ID: **106**

Type: **not specified**

## **Space background simulation for ATHENA mission**

*Tuesday, September 13, 2016 5:25 PM (15 minutes)*

**Presenters:** Dr MANTERO, Alfonso (INFN); Dr DONDERO, Paolo (SWHARD)

**Session Classification:** Parallel 4A - New EM physics validation results

Contribution ID: **107**

Type: **not specified**

## **CMS: Remark on computing performance**

*Tuesday, September 13, 2016 2:00 PM (10 minutes)*

**Primary author:** Prof. IVANTCHENKO, Vladimir (CERN)

**Presenter:** Prof. IVANTCHENKO, Vladimir (CERN)

**Session Classification:** Parallel 3B - Computing Performance

Contribution ID: **108**

Type: **not specified**

## **ATLAS: remarks on computing performance**

*Tuesday, September 13, 2016 2:10 PM (10 minutes)*

**Primary author:** Dr APOSTOLAKIS, John (CERN)

**Presenter:** Dr APOSTOLAKIS, John (CERN)

**Session Classification:** Parallel 3B - Computing Performance

Contribution ID: **109**

Type: **not specified**

## **Performance profiling and benchmark for medical applications**

*Tuesday, September 13, 2016 2:40 PM (20 minutes)*

**Presenter:** Prof. CHO, Kihyeon (KISTI)

**Session Classification:** Parallel 3B - Computing Performance

Contribution ID: **110**

Type: **not specified**

## **G4CPT with Open|Speedshop**

*Tuesday, September 13, 2016 3:00 PM (15 minutes)*

**Presenter:** JUN, Soon Yung (Fermilab)

**Session Classification:** Parallel 3B - Computing Performance



Contribution ID: 111

Type: **not specified**

## **Geant4 MT Performance**

*Tuesday, September 13, 2016 3:15 PM (15 minutes)*

**Presenter:** JUN, Soon Yung (Fermilab)

**Session Classification:** Parallel 3B - Computing Performance

Contribution ID: **112**

Type: **not specified**

## Discussion

Contribution ID: **113**

Type: **not specified**

## **Status of Node.js-based Dossier server**

*Wednesday, September 14, 2016 10:10 AM (15 minutes)*

**Presenters:** IFRIM, Ioana; POKORSKI, Witek (CERN)

**Session Classification:** Parallel 5A - Dossier : Database of Scientific Simulation and Experimental Results: Development and Status

Contribution ID: **114**

Type: **not specified**

## **Format and C++ Access to Data Libraries**

*Thursday, September 15, 2016 2:00 PM (30 minutes)*

Discussion on use of data libraries in Geant4

- I/O performance issues, inc data format
- Usability issues, including C++ and Environment Variables

**Presenters:** DOTTI, Andrea (SLAC National Accelerator Laboratory); Dr MORGAN, Ben (University of Warwick)

**Session Classification:** Parallel 6B - Geant4 Development Tools and Modularization

Contribution ID: 115

Type: **not specified**

## Migration from SVN to Git

*Thursday, September 15, 2016 2:30 PM (30 minutes)*

Discussion/brainstorm on migrating Geant4 to Git

- Migration of repository contents
- Development workflow/model, inc branches, tags, testing
- Development tools, inc g4svn, gitlab

**Primary authors:** DOTTI, Andrea (SLAC National Accelerator Laboratory); Dr MORGAN, Ben (University of Warwick)

**Session Classification:** Parallel 6B - Geant4 Development Tools and Modularization

Contribution ID: **116**

Type: **not specified**

## **Modularisation of Geant4 Libraries**

*Thursday, September 15, 2016 3:00 PM (30 minutes)*

Discussion on Geant4 CMake/Library build structure

- New CMake functionality to simplify library/module declaration and dependencies.
- Timeline for migration to new CMake system
- Aspects related to Git migration and repository structure
- Simplification of preprocessor usage for robust builds of both Geant4 and client applications

**Primary author:** Dr MORGAN, Ben (University of Warwick)

**Session Classification:** Parallel 6B - Geant4 Development Tools and Modularization

Contribution ID: **117**

Type: **not specified**

## Documentation Overview

*Monday, September 12, 2016 11:00 AM (20 minutes)*

**Presenter:** Dr HOWARD, Alexander (ETH Zürich)

**Session Classification:** Plenary 2 - Documentation, Web pages, videos, outreach

Contribution ID: **118**

Type: **not specified**

## **Drupal Migration**

*Monday, September 12, 2016 11:20 AM (20 minutes)*

**Presenter:** Dr FOLGER, Gunter (CERN - PH/SFT)

**Session Classification:** Plenary 2 - Documentation, Web pages, videos, outreach



Contribution ID: **119**

Type: **not specified**

## Videos

*Monday, September 12, 2016 11:40 AM (20 minutes)*

**Presenter:** Mr GARNIER, Laurent (OSUR / CNRS)

**Session Classification:** Plenary 2 - Documentation, Web pages, videos, outreach

Contribution ID: **120**

Type: **not specified**

## **Outreach, G4logo and public presence**

*Monday, September 12, 2016 12:00 PM (30 minutes)*

Discussion about Geant4 outreach activities, our public presence and also the design and shape of the Geant4 logo.

**Presenter:** Dr HOWARD, Alexander (ETH Zürich)

**Session Classification:** Plenary 2 - Documentation, Web pages, videos, outreach

Contribution ID: **121**

Type: **not specified**

## **New features of vis**

*Monday, September 12, 2016 2:00 PM (20 minutes)*

**Presenter:** Dr ALLISON, John (Geant4 Associates International Ltd)

**Session Classification:** Parallel 1B - Advances on vis

Contribution ID: **122**

Type: **not specified**

## **Status of Qt driver**

*Monday, September 12, 2016 2:20 PM (20 minutes)*

**Presenter:** Mr GARNIER, Laurent (OSUR / CNRS)

**Session Classification:** Parallel 1B - Advances on vis

Contribution ID: **123**

Type: **not specified**

## HepRApp viewer

*Monday, September 12, 2016 2:40 PM (20 minutes)*

**Presenter:** Mr SMITH, Brian (Kromek Group)

**Session Classification:** Parallel 1B - Advances on vis

Contribution ID: **124**

Type: **not specified**

## **Discussion**

*Monday, September 12, 2016 3:00 PM (30 minutes)*

**Session Classification:** Parallel 1B - Advances on vis

Contribution ID: 125

Type: **not specified**

## **Auto-vectorization: recent progress**

*Friday, September 16, 2016 9:15 AM (15 minutes)*

**Presenters:** AMADIO, Guilherme (UNESP); Dr VALLECORSA, Sofia (CERN)

**Session Classification:** Parallel 8B - HPC Simulation

Contribution ID: 126

Type: **not specified**

## **Scheduling fine grain workloads in GeantV**

*Friday, September 16, 2016 9:30 AM (15 minutes)*

**Presenter:** GHEATA, Andrei (CERN)

**Session Classification:** Parallel 8B - HPC Simulation



Contribution ID: 127

Type: **not specified**

## **Vectorization for solid modelling and navigation in VecGeom**

**Presenter:** Dr WENZEL, Sandro (CERN)

Contribution ID: 128

Type: **not specified**

## **Progress in GeantV field propagation and EM physics**

*Friday, September 16, 2016 9:45 AM (15 minutes)*

**Presenters:** Dr APOSTOLAKIS, John (CERN); Dr NOVAK, Mihaly (CERN); JUN, Soon Yung (Fermilab)

**Session Classification:** Parallel 8B - HPC Simulation

Contribution ID: 129

Type: **not specified**

## Extending GeantV to accelerators

*Friday, September 16, 2016 9:00 AM (15 minutes)*

**Presenters:** GHEATA, Andrei (CERN); CANAL, Philippe (FermiLab); Dr VALLECORSA, Sofia (CERN)

**Session Classification:** Parallel 8B - HPC Simulation

Contribution ID: **130**

Type: **not specified**

## **Neutron HPC proposal**

*Friday, September 16, 2016 10:00 AM (15 minutes)*

**Presenter:** DOTTI, Andrea (SLAC National Accelerator Laboratory)

**Session Classification:** Parallel 8B - HPC Simulation

Contribution ID: **131**

Type: **not specified**

## **Discussion**

*Friday, September 16, 2016 10:15 AM (15 minutes)*

**Session Classification:** Parallel 8B - HPC Simulation

Contribution ID: 132

Type: **not specified**

## **Reduction of runtime memory in Geant4 using compressed sensing**

*Tuesday, September 13, 2016 2:20 PM (20 minutes)*

**Presenter:** Mr MADSEN, Jonathan (Texas A&M University)

**Session Classification:** Parallel 3B - Computing Performance

Contribution ID: 133

Type: **not specified**

## Update on hadronic string models

*Thursday, September 15, 2016 2:00 PM (20 minutes)*

**Presenters:** RIBON, Alberto (CERN); Dr UZHINSKY, Vladimir (CERN)

**Session Classification:** Parallel 6A - Hadronic models: development & validation, part I

Contribution ID: 134

Type: **not specified**

## Update on intra-nuclear cascade models

*Thursday, September 15, 2016 2:20 PM (20 minutes)*

**Presenter:** DAVID, Jean-Christophe

**Session Classification:** Parallel 6A - Hadronic models: development & validation, part I



Contribution ID: 135

Type: **not specified**

## Update on precompound de-excitation model

*Thursday, September 15, 2016 2:40 PM (20 minutes)*

**Presenter:** Prof. IVANTCHENKO, Vladimir (CERN)

**Session Classification:** Parallel 6A - Hadronic models: development & validation, part I

Contribution ID: 136

Type: **not specified**

## Update on Geant4 simulations of n\_TOF facility

*Thursday, September 15, 2016 3:00 PM (20 minutes)*

**Presenter:** Dr CORTES-GIRALDO, Miguel Antonio (Universidad de Sevilla)

**Session Classification:** Parallel 6A - Hadronic models: development & validation, part I

Contribution ID: 137

Type: **not specified**

## **CMS calorimetric results**

*Thursday, September 15, 2016 4:00 PM (20 minutes)*

**Presenter:** Prof. IVANTCHENKO, Vladimir (CERN)

**Session Classification:** Parallel 7A - Hadronic models: development & validation, part II

Contribution ID: 138

Type: **not specified**

## Update on Radioactive Decay model

*Thursday, September 15, 2016 4:20 PM (20 minutes)*

**Presenter:** Dr WRIGHT, Dennis (SLAC)

**Session Classification:** Parallel 7A - Hadronic models: development & validation, part II

Contribution ID: 139

Type: **not specified**

## **Low-energy neutrons in poly- and single-crystals**

*Thursday, September 15, 2016 4:40 PM (20 minutes)*

**Presenters:** KITTELMANN, Thomas (European Spallation Source ERIC); Dr CAI, Xiao-Xiao (European Spallation Source ERIC/Technical University of Denmark)

**Session Classification:** Parallel 7A - Hadronic models: development & validation, part II

Contribution ID: **140**

Type: **not specified**

## Discussion

*Thursday, September 15, 2016 5:00 PM (30 minutes)*

**Presenters:** RIBON, Alberto (CERN); Dr YARBA, Julia (Fermilab)

**Session Classification:** Parallel 7A - Hadronic models: development & validation, part II

Contribution ID: **141**

Type: **not specified**

## **Recent development of the Reverse MC**

*Wednesday, September 14, 2016 9:00 AM (20 minutes)*

**Presenter:** Dr DESORGHER, Laurent (Radiophysics Institute, CHUV, Lausanne)

**Session Classification:** Parallel 5B - Reverse MC and Biasing

Contribution ID: 142

Type: **not specified**

## Test of the Reverse MC

*Wednesday, September 14, 2016 9:20 AM (20 minutes)*

**Presenters:** LEI, Fan; Dr DESORGHER, Laurent (Radiophysics Institute, CHUV, Lausanne); TR-  
USCOTT, Peter

**Session Classification:** Parallel 5B - Reverse MC and Biasing



Contribution ID: 143

Type: **not specified**

## **Discussion : reverse MC and status of other biasing**

*Wednesday, September 14, 2016 9:50 AM (40 minutes)*

**Session Classification:** Parallel 5B - Reverse MC and Biasing

Contribution ID: 144

Type: **not specified**

## Electron scattering benchmark

*Tuesday, September 13, 2016 4:00 PM (15 minutes)*

**Presenter:** SAWKEY, Daren (Varian)

**Session Classification:** Parallel 4A - New EM physics validation results

Contribution ID: 145

Type: **not specified**

## **An Universal Class in Geant4 For The Patient Geometry Model Construction from DICOM files**

*Tuesday, September 13, 2016 5:40 PM (10 minutes)*

**Presenter:** Mr PERALES MOLINA, Álvaro (Virgen Macarena University Hospital. Seville (Spain))

**Session Classification:** Parallel 4A - New EM physics validation results

Contribution ID: 146

Type: **not specified**

## Status of Generic Biasing

*Wednesday, September 14, 2016 9:40 AM (10 minutes)*

**Presenter:** VERDERI, Marc (LLR, Ecole polytechnique)

**Session Classification:** Parallel 5B - Reverse MC and Biasing