

**[Virtual] 26th Geant4  
Collaboration Meeting  
[Plenaries 20th to 24th]**

**Report of Contributions**

Contribution ID: 1

Type: **not specified**

## Status of hadronic physics

*Wednesday, 22 September 2021 15:00 (30 minutes)*

**Primary author:** RIBON, Alberto (CERN)

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

**Session Classification:** Plenary 3:

Contribution ID: 2

Type: **not specified**

## Status of developments in VecGeom

*Monday, 13 September 2021 17:30 (20 minutes)*

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

**Session Classification:** Geometry working session

Contribution ID: 3

Type: **not specified**

## **Enabling VecGeom navigation in Geant4**

*Monday, 13 September 2021 17:50 (20 minutes)*

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

**Session Classification:** Geometry working session

Contribution ID: 4

Type: **not specified**

## **Code improvements/fixes in VecGeom classes**

*Monday, 13 September 2021 18:10 (20 minutes)*

**Presenter:** KOSTELNIK, Martin

**Session Classification:** Geometry working session

Contribution ID: 5

Type: **not specified**

## Updates on integration in field

*Monday, 13 September 2021 18:30 (20 minutes)*

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

**Session Classification:** Geometry working session

Contribution ID: 6

Type: **not specified**

## Review of open problems

*Monday, 13 September 2021 18:50 (40 minutes)*

**Session Classification:** Geometry working session

Contribution ID: 7

Type: **not specified**

## Hadronic Physics Parallel Session

*Wednesday, 15 September 2021 17:00 (3 hours)*

Special monthly Geant4 Hadronic Physics Working Group meeting:

<https://indico.cern.ch/event/1065059/>

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



Contribution ID: 8

Type: **not specified**

## **New extended example Hadr05**

*Thursday, 16 September 2021 09:00 (5 minutes)*

**Presenter:** MAIRE, Michel (Centre National de la Recherche Scientifique (FR))

**Session Classification:** Examples Parallel Session

Contribution ID: 9

Type: **not specified**

## **New extended example vecGeomNavigation**

*Thursday, 16 September 2021 09:05 (5 minutes)*

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

**Session Classification:** Examples Parallel Session

Contribution ID: **10**

Type: **not specified**

## **New extended example py8decayer**

*Thursday, 16 September 2021 09:10 (5 minutes)*

**Presenter:** YARBA, Julia

**Session Classification:** Examples Parallel Session

Contribution ID: **11**

Type: **not specified**

## **New extended example vis/movies**

*Thursday, 16 September 2021 09:15 (5 minutes)*

**Presenter:** ALLISON, John

**Session Classification:** Examples Parallel Session

Contribution ID: 12

Type: **not specified**

## **New extended example exoticphysics/saxs**

*Thursday, 16 September 2021 09:20 (5 minutes)*

**Primary authors:** PATERNO, Gianfranco (INFN - Ferrara); PANDOLA, Luciano (INFN-LNS)

**Presenter:** PATERNO, Gianfranco (INFN - Ferrara)

**Session Classification:** Examples Parallel Session

Contribution ID: 13

Type: **not specified**

## **g4rmc - new developments**

*Thursday, 16 September 2021 09:25 (5 minutes)*

**Primary authors:** SANTIN, Giovanni (ESA); DESORGHER, Laurent

**Presenter:** SANTIN, Giovanni (ESA)

**Session Classification:** Examples Parallel Session

Contribution ID: 14

Type: **not specified**

## **N&E Examples work plan**

*Thursday, 16 September 2021 09:40 (15 minutes)*

**Presenter:** HRIVNACOVA, Ivana (Université Paris-Saclay (FR))

**Session Classification:** Examples Parallel Session

Contribution ID: 15

Type: **not specified**

## The advanced example Radioprotection

*Thursday, 16 September 2021 09:55 (10 minutes)*

**Presenter:** MAGINI, Jacopo (Surrey University)

**Session Classification:** Examples Parallel Session



Contribution ID: 16

Type: **not specified**

## Accurate and efficient simulation aerosols in GEANT4 using fastAerosol

*Thursday, 16 September 2021 10:15 (10 minutes)*

**Presenter:** KNAIAN, Ara (NK Labs)

**Session Classification:** Examples Parallel Session

Contribution ID: 17

Type: **not specified**

## **Proposal for a new advanced example on modeling neutron detectors with pulse shape discrimination**

*Thursday, 16 September 2021 10:25 (10 minutes)*

**Presenter:** MACFADDEN, Nate (NK Labs)

**Session Classification:** Examples Parallel Session

Contribution ID: **18**

Type: **not specified**

## **New developments of the doiPET advanced example**

*Thursday, 16 September 2021 10:05 (10 minutes)*

**Presenter:** AHMED , Abdella

**Session Classification:** Examples Parallel Session

Contribution ID: **19**

Type: **not specified**

## **Advanced Examples work plan**

*Thursday, 16 September 2021 10:35 (10 minutes)*

**Presenter:** GUATELLI, Susanna

**Session Classification:** Examples Parallel Session

Contribution ID: 20

Type: **not specified**

## Update on Development and Build Tools

*Tuesday, 21 September 2021 15:00 (20 minutes)*

**Presenter:** MORGAN, Benjamin (University of Warwick (GB))

**Session Classification:** Plenary 2

Contribution ID: 21

Type: **not specified**

## **Coding Patterns for Performance**

*Tuesday, 21 September 2021 15:20 (20 minutes)*

**Presenter:** AMADIO, Guilherme (CERN)

**Session Classification:** Plenary 2

Contribution ID: 22

Type: **not specified**

## Migration of the Geant4 Website to Jekyll

*Tuesday, 21 September 2021 15:40 (20 minutes)*

**Presenters:** KONSTANTINOV, Dmitri (Institute for High Energy Physics of NRC Kurchatov Institute (R)); HOWARD, Alexander (Imperial College (GB)); LATYSHEV, Grigori (Institute for High Energy Physics of NRC Kurchatov Institute (R))

**Session Classification:** Plenary 2

Contribution ID: 23

Type: **not specified**

## Git Repository Strategy

*Tuesday, 21 September 2021 16:00 (20 minutes)*

**Presenters:** RIBON, Alberto (CERN); VERDERI, Marc (Centre National de la Recherche Scientifique (FR))

**Session Classification:** Plenary 2



Contribution ID: 24

Type: **not specified**

## Discussion

*Tuesday, 21 September 2021 16:30 (40 minutes)*

**Session Classification:** Plenary 2

Contribution ID: 25

Type: **not specified**

## Examples –Novice and Extended

*Friday, 24 September 2021 15:00 (15 minutes)*

**Primary author:** HRIVNACOVA, Ivana (Université Paris-Saclay (FR))

**Presenter:** HRIVNACOVA, Ivana (Université Paris-Saclay (FR))

**Session Classification:** Plenary 5

Contribution ID: 26

Type: **not specified**

## Analysis

**Primary author:** HRIVNACOVA, Ivana (Université Paris-Saclay (FR))

**Presenter:** HRIVNACOVA, Ivana (Université Paris-Saclay (FR))

**Session Classification:** Plenary 5

Contribution ID: 27

Type: **not specified**

## Visualization

**Primary author:** GARNIER, Laurent

**Presenter:** GARNIER, Laurent

**Session Classification:** Plenary 5

Contribution ID: **28**

Type: **not specified**

## **Documentation –An outsider’s view**

*Friday, 24 September 2021 15:45 (15 minutes)*

**Primary author:** LOSILLA FERNÁNDEZ, Sergio Alberto (Neutron Therapeutics Finland Oy)

**Presenter:** LOSILLA FERNÁNDEZ, Sergio Alberto (Neutron Therapeutics Finland Oy)

**Session Classification:** Plenary 5

Contribution ID: **29**

Type: **not specified**

## Documentation

*Friday, 24 September 2021 16:00 (15 minutes)*

**Primary author:** HOWARD, Alexander (Imperial College (GB))

**Presenter:** HOWARD, Alexander (Imperial College (GB))

**Session Classification:** Plenary 5

Contribution ID: 30

Type: **not specified**

## **Communicating with users –The web forum and the technical forum**

*Friday, 24 September 2021 16:15 (15 minutes)*

**Primary authors:** MORGAN, Benjamin (University of Warwick (GB)); BANDIERAMONTE, Marilena (University of Pittsburgh (US))

**Presenters:** MORGAN, Benjamin (University of Warwick (GB)); BANDIERAMONTE, Marilena (University of Pittsburgh (US))

**Session Classification:** Plenary 5

Contribution ID: 31

Type: **not specified**

## **G4DNA chemistry example for Water radiolysis with Scavengers**

*Thursday, 16 September 2021 09:30 (10 minutes)*

**Primary authors:** DESORGHER, Laurent; TRAN, Ngoc Hoang

**Presenter:** TRAN, Ngoc Hoang

**Session Classification:** Examples Parallel Session



Contribution ID: **32**

Type: **not specified**

## Update on geometry developments

*Thursday, 23 September 2021 15:00 (15 minutes)*

Recent developments in geometry, planned for inclusion in next release

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

**Session Classification:** Plenary 4

Contribution ID: 33

Type: **not specified**

## **New scoring functionalities**

*Thursday, 23 September 2021 15:15 (15 minutes)*

Review of new functionalities in scoring

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

**Session Classification:** Plenary 4

Contribution ID: 34

Type: **not specified**

## Tasking as default parallelism scheme in release 11

*Thursday, 23 September 2021 15:30 (20 minutes)*

An overview of how a user application will change, what new features are offered and which setups are possible

**Presenter:** MADSEN, Jonathan (Lawrence Berkeley National Laboratory)

**Session Classification:** Plenary 4

Contribution ID: 35

Type: **not specified**

## **New functionalities and updates to analysis module in release 11**

*Thursday, 23 September 2021 15:50 (20 minutes)*

Review of recent updates and developments in the the analysis module, which will be included in release 11

**Presenter:** HRIVNACOVA, Ivana (Université Paris-Saclay (FR))

**Session Classification:** Plenary 4

Contribution ID: **36**

Type: **not specified**

## **New features and developments in visualisation**

*Thursday, 23 September 2021 16:10 (20 minutes)*

Review of the recent developments and updates in visualisation drivers, planned for inclusion in release 11.

**Presenter:** ALLISON, John

**Session Classification:** Plenary 4

Contribution ID: 37

Type: **not specified**

## **Modular libraries in release 11**

*Thursday, 23 September 2021 16:30 (20 minutes)*

Features of the new mechanism for modular libraries; expected adaptation/migration for users and potentials for future extensions

**Presenter:** MORGAN, Benjamin (University of Warwick (GB))

**Session Classification:** Plenary 4

Contribution ID: **38**

Type: **not specified**

## **Release 11 schedule**

*Thursday, 23 September 2021 16:50 (10 minutes)*

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

**Session Classification:** Plenary 4

Contribution ID: 39

Type: **not specified**

## **Reconfiguration of G4LowEPPysics for low energy polarised X-/gamma ray transport applications**

*Friday, 17 September 2021 09:00 (20 minutes)*

**Presenter:** BROWN, Jeremy

**Session Classification:** Parallel EM



Contribution ID: 40

Type: **not specified**

## Updates on PIXE

*Friday, 17 September 2021 09:20 (20 minutes)*

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

**Co-author:** GUATELLI, Susanna

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

**Session Classification:** Parallel EM

Contribution ID: 41

Type: **not specified**

## **Geant4 implementation of interference effects in X-ray coherent scattering**

*Friday, 17 September 2021 09:40 (20 minutes)*

**Presenter:** PATERNO, Gianfranco (INFN - Ferrara)

**Session Classification:** Parallel EM

Contribution ID: 42

Type: **not specified**

## **Geant4-DNA datasets for ionization and excitation of liquid water by protons above 100 MeV**

*Friday, 17 September 2021 10:00 (20 minutes)*

**Primary author:** DOMÍNGUEZ MUÑOZ, A. Damián (Universidad de Sevilla)

**Co-author:** CORTES GIRALDO, Miguel Antonio (Universidad de Sevilla (ES))

**Presenter:** DOMÍNGUEZ MUÑOZ, A. Damián (Universidad de Sevilla)

**Session Classification:** Parallel EM

Contribution ID: 43

Type: **not specified**

## **Implementing new physics models for electrons in DNA nucleobases**

*Friday, 17 September 2021 17:00 (15 minutes)*

**Primary author:** ZEIN, Sara (CENBG)

**Presenter:** ZEIN, Sara (CENBG)

**Session Classification:** Parallel EM

Contribution ID: 44

Type: **not specified**

## **Implementation of the EPICS2017 database for photons in Geant4**

*Friday, 17 September 2021 16:00 (20 minutes)*

**Primary author:** ZHUXIN, Li

**Presenter:** ZHUXIN, Li

**Session Classification:** Parallel EM

Contribution ID: 45

Type: **not specified**

## **GEANT4 MicroElec module 2021 update**

*Friday, 17 September 2021 16:40 (20 minutes)*

**Primary authors:** INGUIMBERT, Christophe (ONERA); GIBARU, Quentin (ONERA Toulouse)

**Presenters:** INGUIMBERT, Christophe (ONERA); GIBARU, Quentin (ONERA Toulouse)

**Session Classification:** Parallel EM

Contribution ID: 46

Type: **not specified**

## Mesoscopic model of Water Radiolysis in Geant4-DNA

*Friday, 17 September 2021 17:15 (20 minutes)*

**Primary authors:** TRAN , Ngochoang (CENBG); INCERTI, Sebastien (CNRS/IN2P3)

**Presenter:** TRAN , Ngochoang (CENBG)

**Session Classification:** Parallel EM

Contribution ID: 47

Type: **not specified**

## **Alternative scheme for excepcion**

*Tuesday, 14 September 2021 17:30 (30 minutes)*

**Presenter:** LOSILLA FERNÁNDEZ, Sergio Alberto (Neutron Therapeutics Finland Oy)

**Session Classification:** Kernel parallel



Contribution ID: 48

Type: **not specified**

## Specialized tracking for G4HepEm

*Tuesday, 14 September 2021 18:00 (45 minutes)*

**Presenter:** NOVAK, Mihaly (CERN)

**Session Classification:** Kernel parallel

Contribution ID: 49

Type: **not specified**

## Discussion

*Tuesday, 14 September 2021 18:45 (15 minutes)*

**Session Classification:** Kernel parallel

Contribution ID: 50

Type: **not specified**

## Discussion about model catalogue

*Friday, 17 September 2021 10:20 (30 minutes)*

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

**Co-author:** IVANTCHENKO, Vladimir (CERN)

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

**Session Classification:** Parallel EM

Contribution ID: 51

Type: **not specified**

## User interfaces

*Friday, 24 September 2021 15:30 (15 minutes)*

**Presenter:** MURAKAMI, Koichi

**Session Classification:** Plenary 5

Contribution ID: 52

Type: **not specified**

## **Examples –Advanced**

*Friday, 24 September 2021 15:15 (15 minutes)*

**Presenter:** GUATELLI, Susanna

**Session Classification:** Plenary 5

Contribution ID: 53

Type: **not specified**

## Fast Simulation R&D Report

*Thursday, 16 September 2021 16:00 (30 minutes)*

**Presenter:** SALAMANI, Dalila (CERN)

**Session Classification:** R&D parallel session

Contribution ID: 54

Type: **not specified**

## **Integration of Opticks and Geant4 (an advanced example: CaTS)**

*Thursday, 16 September 2021 16:30 (30 minutes)*

**Presenter:** WENZEL, Hans-Joachim (Fermi National Accelerator Lab. (US))

**Session Classification:** R&D parallel session

Contribution ID: 55

Type: **not specified**

## **AdePT status**

*Thursday, 16 September 2021 17:00 (20 minutes)*

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

**Session Classification:** R&D parallel session



Contribution ID: 56

Type: **not specified**

## **AdePT Geant4 integration**

*Thursday, 16 September 2021 17:20 (10 minutes)*

**Presenter:** POKORSKI, Witold (CERN)

**Session Classification:** R&D parallel session

Contribution ID: 57

Type: **not specified**

## Discussion

*Thursday, 16 September 2021 17:30 (30 minutes)*

**Session Classification:** R&D parallel session

Contribution ID: 58

Type: **not specified**

## Welcome & Opening remarks

*Monday, 20 September 2021 15:00 (15 minutes)*

**Primary authors:** RIBON, Alberto (CERN); VERDERI, Marc (Centre National de la Recherche Scientifique (FR))

**Presenter:** VERDERI, Marc (Centre National de la Recherche Scientifique (FR))

**Session Classification:** Plenary 1

Contribution ID: 59

Type: **not specified**

## **Performance Tests (A64FX, M1 and AMD)**

*Monday, 20 September 2021 15:35 (20 minutes)*

**Primary authors:** MURAKAMI, Koichi (KEK); MURAKAMI, Koichi

**Presenter:** MURAKAMI, Koichi

**Session Classification:** Plenary 1

Contribution ID: **60**

Type: **not specified**

## **Open and new requirements - Medical and bio science**

*Monday, 20 September 2021 16:07 (12 minutes)*

**Presenter:** PETRINGA, Giada

**Session Classification:** Plenary 1

Contribution ID: **61**

Type: **not specified**

## **Open and new requirements - Nuclear Physics experiments**

*Monday, 20 September 2021 16:19 (12 minutes)*

**Presenter:** SARMIENTO PICO, Luis Gerardo

**Session Classification:** Plenary 1

Contribution ID: 62

Type: **not specified**

## **Open and new requirements - Space science and engineering**

*Monday, 20 September 2021 16:31 (12 minutes)*

**Presenter:** SANTIN, Giovanni (ESA)

**Session Classification:** Plenary 1

Contribution ID: 63

Type: **not specified**

## **Open and new requirements - HEP intensity and cosmic frontier experiment**

*Monday, 20 September 2021 16:43 (12 minutes)*

**Presenter:** GENSER, Krzysztof (Fermi National Accelerator Laboratory (US))

**Session Classification:** Plenary 1



Contribution ID: 64

Type: **not specified**

## **Open and new requirements - LHC and other HEP Energy Frontier experiments**

*Monday, 20 September 2021 15:55 (12 minutes)*

**Presenter:** BANDIERAMONTE, Marilena (University of Pittsburgh (US))

**Session Classification:** Plenary 1

Contribution ID: 65

Type: **not specified**

## R&D Overview

*Monday, 20 September 2021 15:15 (20 minutes)*

**Presenter:** POKORSKI, Witold (CERN)

**Session Classification:** Plenary 1

Contribution ID: **66**

Type: **not specified**

## Update on Reverse Monte-Carlo

*Wednesday, 15 September 2021 16:00 (30 minutes)*

**Presenter:** DESORGHER, Laurent

**Session Classification:** Generic processes & materials

Contribution ID: 67

Type: **not specified**

## Update on GFlash

*Wednesday, 15 September 2021 16:30 (20 minutes)*

**Presenters:** SEMENIOUK, Igor (Centre National de la Recherche Scientifique (FR)); VERDERI, Marc (Centre National de la Recherche Scientifique (FR))

**Session Classification:** Generic processes & materials

Contribution ID: **68**

Type: **not specified**

## Status of EM physics

*Wednesday, 22 September 2021 15:30 (30 minutes)*

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

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

**Session Classification:** Plenary 3:

Contribution ID: **69**

Type: **not specified**

## **Report on EM parallel sessions**

*Wednesday, 22 September 2021 16:00 (20 minutes)*

**Presenter:** PANDOLA, Luciano (INFN-LNS)

**Session Classification:** Plenary 3:

Contribution ID: 70

Type: **not specified**

## **G4EmHep Project**

*Wednesday, 22 September 2021 16:20 (20 minutes)*

**Primary author:** NOVAK, Mihaly (CERN)

**Presenter:** NOVAK, Mihaly (CERN)

**Session Classification:** Plenary 3:

Contribution ID: 71

Type: **not specified**

## Status of optical physics

*Wednesday, 22 September 2021 16:40 (20 minutes)*

**Primary author:** SAWKEY, Daren

**Presenter:** SAWKEY, Daren

**Session Classification:** Plenary 3:



Contribution ID: 72

Type: **not specified**

## **Geant4 simulation of X-ray transition radiation at small angles**

*Friday, 17 September 2021 16:20 (20 minutes)*

**Presenter:** GRICHINE, Vladimir (Russian Academy of Sciences (RU))

**Session Classification:** Parallel EM

Contribution ID: 73

Type: **not specified**

## R&D Strategy

*Tuesday, 21 September 2021 16:20 (10 minutes)*

**Presenters:** RIBON, Alberto (CERN); VERDERI, Marc (Centre National de la Recherche Scientifique (FR))

**Session Classification:** Plenary 2