12th Geant4 Collaboration Workshop

Report of Contributions

https://indico.cern.ch/e/10311

Contribution ID: **0** Type: **not specified**

Welcome to the 12th GEANT4 Workshop at Hebden Bridge

Thursday, 13 September 2007 09:00 (10 minutes)

Presenter: ALLISON, John

Session Classification: Plenary Session 1

Contribution ID: **1** Type: **not specified**

Issues for the Workshop

Thursday, 13 September 2007 09:10 (20 minutes)

Presenter: Dr APOSTOLAKIS, John (CERN)

Session Classification: Plenary Session 1

Contribution ID: **2** Type: **not specified**

GEANT4 Developments & Plans

Presenter: Dr APOSTOLAKIS, John (CERN)

Contribution ID: **3** Type: **not specified**

Geant4 in medical physics

Thursday, 13 September 2007 10:00 (30 minutes)

Presenter: PERL, Joseph (Unknown)

Session Classification: Plenary Session 1

Contribution ID: **4** Type: **not specified**

Geant4 validation with test beam data from LHC calorimetry

Thursday, 13 September 2007 10:30 (30 minutes)

Presenter: STRIZENEC, Pavol

Session Classification: Plenary Session 1

Contribution ID: **5** Type: **not specified**

GEANT4 and the Underground Physics Community

Thursday, 13 September 2007 12:00 (30 minutes)

Presenter: PANDOLA, Luciano (Unknown)

Session Classification: Plenary Session 2 - Users Session

Contribution ID: **6** Type: **not specified**

User Presentation - Space Physics

Thursday, 13 September 2007 12:30 (30 minutes)

Presenter: Dr SANTIN, Giovanni (ESA)

Session Classification: Plenary Session 2 - Users Session

Contribution ID: **7** Type: **not specified**

Muon-Induced Neutrons Measured with ZEPLIN-II Veto

Thursday, 13 September 2007 14:00 (20 minutes)

Summary

The muon-induced neutron background in the Boulby Underground Laboratory (North Yorkshire) was measured using the ZEPLIN-II experiment veto system. A delayed coincidence method was used for this purpose, with the muon producing the first pulse in an event, and gamma rays from captures (in hydrogen or other elements) the second (delayed) pulse. Detailed GEANT4 models of the Boulby underground laboratory and the complete ZEPLIN-II detector were used to simulate the complete cascades created by muons generated a few metres into the rock. We present here details of the physics list used for this simulation, along with a comparison with experimental results.

Presenter: LINDOTE, Alexandre (LIP-Coimbra, Portugal)

Session Classification: Parallel Session 1 (a) - Low Background Experiments

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **8** Type: **not specified**

EDELWEISS-II Muon-Veto Simulations with GEANT4

Thursday, 13 September 2007 14:20 (20 minutes)

Summary

Direct Dark Matter searches such as EDELWEISS make use of the particle identification via the simultaneous measurement of ionisation and heat signals. Thus, electron/gamma background can be separated from potential WIMP scattered off on Ge nuclei. Neutron scattering with the same ionisation/heat ratio as WIMP scattering is a severe background. Although the Modane underground lab is shielded by 4800mwe, muon induced neutrons through DIS form a background limiting the sensitivity for WIMPs. To identify and suppress this background passively and actively with a muon veto system, detailed GEANT4 simulations have been performed. Results based on the full 3-dim geometry of the underground lab and the EDELWEISS setup will be presented and the suppression of muon-induced neutron events in the Ge detectors using the muon veto system will be discussed.

Presenter: HORN, Markus (Institut für Kernphysik, Karlsruhe, Germany)

Session Classification: Parallel Session 1 (a) - Low Background Experiments

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **9** Type: **not specified**

Muon Propagation in Rock with GEANT4, FLUKA and MUSIC

Thursday, 13 September 2007 14:40 (20 minutes)

Summary

The propagation of muons through rock has been simulated using three different codes: FLUKA, MUSIC and Geant4. Quantities as the survival propagation, the mean energy and the lateral displacement of the muons have been estimated in every case. Dependence of these quantities on the initial muon flux, code parameters and physical process involved will be presented. As a part of the background characterization of the Canfranc Underground Laboratory, results of these simulations have been used to estimate the neutron flux in the new facility.

Presenter: IGUAZ, Francisco (Universidad de Zaragoza, Spain)

Session Classification: Parallel Session 1 (a) - Low Background Experiments

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **10** Type: **not specified**

Muon-Induced Neutron Simulations with GEANT4

Thursday, 13 September 2007 15:00 (20 minutes)

Presenter: SCHOLL, Stephan (University of Tuebingen, Germany)

Session Classification: Parallel Session 1 (a) - Low Background Experiments

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **11** Type: **not specified**

Low-Energy Neutron Propagation in GEANT4 and MCNPX

Summary

Simulations of neutron background from rock for underground experiments are presented. Neutron propagation through two types of rock, lead and hydrocarbon material, is discussed. The results show a reasonably good agreement between GEANT4, MCNPX and GEANT3 in transporting low-energy neutrons.

Presenter: ROBINSON, M.

Contribution ID: **12** Type: **not specified**

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Contribution ID: **13** Type: **not specified**

MaGe: a MC Framework for Gerda and Majorana Experiments

Summary

A framework called MaGe, which is based on the Geant4 toolkit. Such a joint approach has many benefits: the development of common tools can be shared, the code is not duplicated and can be more quickly tested, and more experimental data can be made available for validation. Geant4 was selected as the underlying Monte Carlo toolkit because (1) it can provide the full simulation chain, (2) it is now well-established in the Particle Physics community and (3) it includes a wide set of physics models. On the other hand, the Object Oriented structure of Geant4 is very suitable for the development of a common framework considering the geographical distribution of the groups partecipating in MaGe. Furthermore, the flexibility of the Object Oriented (OO) interfaces also enables each experiment to take care independently of its specific tools, like geometries. In this talk the MaGe framework will be described; selected physics applications will be presented and discussed.

Presenter: PANDOLA, L.

Contribution ID: **14** Type: **not specified**

Simulation of the COBRA Double-Beta Decay Experiment

Presenter: MORGAN, B.

Contribution ID: **15** Type: **not specified**

Discussion and Summary

Contribution ID: **16** Type: **not specified**

Validation of dose deposited for 125I brachytherapy sources (low-energy photons)

Thursday, 13 September 2007 14:00 (20 minutes)

Presenter: MAIGNE, Lydia (LPC, Clermont Ferrand, France)

Session Classification: Parallel Session 2 (a) - Medical / Gate Applications

Track Classification: Geant4 Users Conference : Medical

Contribution ID: **17** Type: **not specified**

Deployment of GATE/G4 simulations on a grid architecture

Thursday, 13 September 2007 14:20 (20 minutes)

Presenter: MAIGNE, Lydia (LPC, Clermont Ferrand, France)

Session Classification: Parallel Session 2 (a) - Medical / Gate Applications

Track Classification: Geant4 Users Conference : Medical

Contribution ID: **18** Type: **not specified**

Simulating CT imaging with GATE

Thursday, 13 September 2007 14:40 (20 minutes)

Presenter: CASSOL BRUNNER, Franca (CPPM Marseille, France)

Session Classification: Parallel Session 2 (a) - Medical / Gate Applications

Track Classification: Geant4 Users Conference : Medical

Contribution ID: **19** Type: **not specified**

Overview of VRTs in GATE and Geant4

Thursday, 13 September 2007 15:00 (20 minutes)

Primary authors: Dr HOWARD, Alex (CERN); KARAKATSANIS, Nicolas (National Technical University of Athens)

Session Classification: Parallel Session 2 (a) - Medical / Gate Applications

Track Classification: Geant4 Users Conference : Medical

Contribution ID: **20** Type: **not specified**

User Presentation

Contribution ID: **21** Type: **not specified**

User Presentation

Contribution ID: **22** Type: **not specified**

User Presentation

Contribution ID: **23** Type: **not specified**

User Presentation

Contribution ID: **24** Type: **not specified**

Discussion & Summary

Contribution ID: **25** Type: **not specified**

Muon-Induced Neutrons Measured with ZEPLIN-II Veto

Presenter: LINDOTE, A.

Contribution ID: **26** Type: **not specified**

Low-Energy Neutron Propagation in GEANT4 and MCNPX

Thursday, 13 September 2007 16:00 (20 minutes)

Summary

Simulations of neutron background from rock for underground experiments are presented. Neutron propagation through two types of rock, lead and hydrocarbon material, is discussed. The results show a reasonably good agreement between GEANT4, MCNPX and GEANT3 in transporting low-energy neutrons.

Presenter: ROBINSON, Matthew (University of Sheffield, UK)

Session Classification: Parallel Session 1 (b) - Low Background Experiments

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **27** Type: **not specified**

New GEANT4 Models for Muon Nuclear Interactions

Primary author: KOSSOV, Mikhail (ITEP-Moscow & CERN)

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **28** Type: **not specified**

MaGe: a MC Framework for Gerda and Majorana Experiments

Thursday, 13 September 2007 16:40 (20 minutes)

Summary

The Gerda and Majorana experiments, both searching for the neutrinoless double beta-decay of Ge-76, are jointly developing a single Monte Carlo framework called MaGe, which is based on the GEANT4 toolkit. Such a joint approach has many benefits: the development of common tools can be shared, the code is not duplicated and can be more quickly tested, and more experimental data can be made available for validation. Geant4 was selected as the underlying Monte Carlo toolkit because (1) it can provide the full simulation chain, (2) it is now well-established in the Particle Physics community and (3) it includes a wide set of physics models. On the other hand, the Object Oriented structure of Geant4 is very suitable for the development of a common framework considering the geographical distribution of the groups partecipating in MaGe. Furthermore, the flexibility of the Object Oriented (OO) interfaces also enables each experiment to take care independently of its specific tools, like geometries. In this talk the MaGe framework will be described; selected physics applications will be presented and discussed.

Presenter: PANDOLA, Luciano (INFN, Gran Sasso National Laboratory, Italy)

Session Classification: Parallel Session 1 (b) - Low Background Experiments

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **29** Type: **not specified**

Simulation of the COBRA Double-Beta Decay Experiment

Thursday, 13 September 2007 17:00 (20 minutes)

Summary

The COBRA experiment aims to search for neutrinoless double beta decay using a large array of Cadmium Zinc Telluride crystals. Radioisotopes together with muons and neutrons provide the major sources of background for such a
search. A GEANT4-based simulation has been developed for COBRA to understand these background sources in the current experiment and to provide a performance modelling tool for future detectors. This talk will describe the COBRA simulation and highlight two aspects; the use of the Radioactive Decay Module for simulating single and multiple isotope decays, and the generation of event vertices in many small volumes.

Presenter: MORGAN, Ben (University of Warwick, UK)

Session Classification: Parallel Session 1 (b) - Low Background Experiments

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **30** Type: **not specified**

Discussion & Summary

Thursday, 13 September 2007 17:20 (40 minutes)

Session Classification: Parallel Session 1 (b) - Low Background Experiments

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **31** Type: **not specified**

The Italian activity of the LNS-INFN Group

Thursday, 13 September 2007 16:00 (30 minutes)

Presenters: Dr ROMANO, Francesco (Laboratori Nazionali del Sud - INFN / Catania University); CIRRONE, Pablo (Unknown)

Session Classification: Parallel Session 2 (b) - Medical / Gate Applications

Track Classification: Geant4 Users Conference : Medical

Contribution ID: **32** Type: **not specified**

Geant4 simulation of HIBMC facility using DICOM

Thursday, 13 September 2007 16:30 (20 minutes)

Presenter: YAMASHITA, Tomohiro (Kobe University, Japan)

Session Classification: Parallel Session 2 (b) - Medical / Gate Applications

Track Classification: Geant4 Users Conference : Medical

Contribution ID: **33** Type: **not specified**

GAMOS status and plans

Thursday, 13 September 2007 16:50 (20 minutes)

Presenter: Mr ARCE, Pedro (Cent.de Investigac.Energeticas Medioambientales y Tecnol. (CIEMAT))

Session Classification: Parallel Session 2 (b) - Medical / Gate Applications

Track Classification: Geant4 Users Conference : Medical

Contribution ID: **34** Type: **not specified**

Recent developments in Geant4 related activities at CENBG

Thursday, 13 September 2007 17:10 (20 minutes)

Presenter: INCERTI, Sébastien (CENBG, IN2P3 - CNRS- Bordeaux 1 University)

Session Classification: Parallel Session 2 (b) - Medical / Gate Applications

Track Classification: Geant4 Users Conference : Medical

Contribution ID: **35** Type: **not specified**

Discussion & Summary (incl Geant4/GATE meeting summary (TBC))

Thursday, 13 September 2007 17:30 (30 minutes)

Session Classification: Parallel Session 2 (b) - Medical / Gate Applications

Contribution ID: **36** Type: **not specified**

Faster Navigation for Regular Voxel Geometries

Friday, 14 September 2007 09:00 (25 minutes)

Presenter: ARCE, Pedro

Session Classification: Geometry Challenges

Contribution ID: **37** Type: **not specified**

Trade-offs and speed-ups - discussion

Friday, 14 September 2007 09:25 (15 minutes)

Presenter: PANEL

Session Classification: Geometry Challenges

Contribution ID: **38** Type: **not specified**

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Contribution ID: **39** Type: **not specified**

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Contribution ID: **40** Type: **not specified**

THEME - Geometry Challenges

Presenter: Dr APOSTOLAKIS, John (CERN)

Contribution ID: **41** Type: **not specified**

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Contribution ID: **42** Type: **not specified**

THEME - CPU Performance

Presenter: Dr RIBON, Alberto (CERN)

Contribution ID: **43** Type: **not specified**

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Contribution ID: **44** Type: **not specified**

Simulation of Low-Energy Nuclear Recoils Using GEANT4

Friday, 14 September 2007 14:20 (20 minutes)

Summary

We start by studying and validating the many different GEANT4 stopping power parameterizations for the slowing down of low energy heavy ions in a substance. We do this by simulating proton and alpha emission in different materials, and comparing the total, as well as the electronic and nuclear stopping powers independently with those reported on NIST databases, SRIM results and experimental data. We also compare the stopping power of symmetrical projectile/target combinations of Si, Ge, LAr and LXe with predictions from different theories and SRIM. We then implement a brand new physical process in GEANT4 simulating the nuclear recoils of the atoms in the substance after the scattering of the incident particle. A full cascade is implemented. At first with start with the continuous slowing down approximation where the recoil energy is taken from the nuclear stopping parameterization. Then we implement a full discrete process with cross sections. The different quenching factors of the nuclear recoil cascade are then taken for the materials mentioned above and compared with the predictions of Lindhard, SRIM and experimental data.

Presenter: PINHO, Ricardo (LIP-Coimbra, Portugal)

Session Classification: Parallel Session 1 - Low-Energy & Optical

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **46** Type: **not specified**

New Model for Simulation of Light Reflection in GEANT4

Friday, 14 September 2007 14:00 (20 minutes)

Summary

In the simulation of optical reflection with the Unified model, GEANT4 makes some approximations that are far from ideal in some conditions. In the V.U.V. region the material reflectivity is not normally well described with this model due to the usually low reflectivity at these wavelengths. Furthermore some materials, for example PTFE, have a complex reflectivity profile which is not well described with the Unified Model. We have introduced a new model in GEANT4 simulation which consists of a diffuse lobe plus a specular lobe. The diffuse lobe is described by the Wolff-Oren-Nayar model which takes into account both the roughness of the surface, the viewing and incident angles. The specular lobe is described by the geometrical model of Torrence and Sparrow. The model introduced is valid for high and low reflectivities and also for dielectrics and metals.

Presenter: SILVA, Claudio (LIP-Coimbra, Portugal)

Session Classification: Parallel Session 1 - Low-Energy & Optical

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **47** Type: **not specified**

Introduction - kernel structure, user classes

Primary author: ASAI, Makoto (SLAC)

Contribution ID: **48** Type: **not specified**

Material description

Friday, 14 September 2007 16:30 (15 minutes)

Primary author: ASAI, Makoto (SLAC)

Session Classification: Tutorials

Contribution ID: **49** Type: **not specified**

Geometry - solid, logical volume, physical volume

Primary author: ASAI, Makoto (SLAC)

Contribution ID: **50** Type: **not specified**

Tutorial - I

Contribution ID: **51** Type: **not specified**

Tutorial - I

Contribution ID: **52** Type: **not specified**

Physics Lists : Use Cases and guidelines

Saturday, 15 September 2007 10:10 (30 minutes)

Presenter: FOLGER, Gunter (CERN)

Session Classification: Saturday Plenary 1 - News from Geant4

Track Classification: Geant4 Users Conference : Other

Contribution ID: **53** Type: **not specified**

THEME - Users Helping Users

Contribution ID: **54** Type: **not specified**

New capabilities of Geant4

Highlights of developments in the capabilities of the Geant4 kernel (including tracking, event & run management, materials, particles) and the modules for interaction with users (visualization, interfaces, persistency)

Contribution ID: **55** Type: **not specified**

Technical Forum

Saturday, 15 September 2007 11:30 (1h 30m)

Session Classification: Technical Forum (Plenary)

Contribution ID: **56** Type: **not specified**

Technical Forum

Contribution ID: **57** Type: **not specified**

Technical Forum

Contribution ID: **58** Type: **not specified**

Bus leaves Moyles at 09:15

Sunday, 16 September 2007 09:15 (30 minutes)

Session Classification: Excursion am

Contribution ID: **59** Type: **not specified**

Arrive Oxenhope

Sunday, 16 September 2007 09:45 (0 minutes)

Session Classification: Excursion am

Contribution ID: **60** Type: **not specified**

Take train

Sunday, 16 September 2007 10:15 (0 minutes)

Session Classification: Excursion am

Contribution ID: **61** Type: **not specified**

Journey on the Keighley and Worth Valley Railway

Sunday, 16 September 2007 10:30 (30 minutes)

Session Classification: Excursion am

Contribution ID: **62** Type: **not specified**

Ride with Thomas the Tank Engine

Sunday, 16 September 2007 12:00 (30 minutes)

Session Classification: Excursion am

Contribution ID: **63** Type: **not specified**

Visit Bronte Parsonage Museum

Sunday, 16 September 2007 14:00 (2 hours)

Session Classification: Excursion pm

Contribution ID: **64** Type: **not specified**

Or Walk back to Hebden Bridge over the moors

Sunday, 16 September 2007 14:00 (2 hours)

Session Classification: Excursion pm

Contribution ID: **65** Type: **not specified**

Or Travel back to Oxenhope by train

Sunday, 16 September 2007 14:00 (2 hours)

Session Classification: Excursion pm

Contribution ID: **66** Type: **not specified**

Or Shop in Haworth for souvenirs

Sunday, 16 September 2007 14:00 (2 hours)

Session Classification: Excursion pm

Contribution ID: **67** Type: **not specified**

Bus picks up at Haworth

Contribution ID: **68** Type: **not specified**

BESIII Detector Simulation with Geant4

Presenter:

Track Classification: Geant4 Users Conference : Low background

Contribution ID: **78** Type: **not specified**

Discussion

Thursday, 13 September 2007 15:20 (10 minutes)

Session Classification: Parallel Session 2 (a) - Medical / Gate Applications

Contribution ID: **82** Type: **not specified**

BESIII Detector Simulation with Geant4

Friday, 14 September 2007 14:40 (20 minutes)

The BESIII is a new detector which will take data in 2008 on the upgraded electron-poisitron collider (BEPCII) at 2-5 GeV. The development of the BESIII MC program based on Geant4 is outlined. The status and proformance of the simulation are reported. Some problems and user requirements are mentioned.

Primary author: Dr LIU, Huaimin (IHEP, Beijing)

Co-author: Dr CAO, Guofu (IHEP. Beijing)

Presenter: Dr LIU, Huaimin (IHEP, Beijing)

Session Classification: Parallel Session 1 - Low-Energy & Optical

Track Classification: Geant4 Users Conference : HEP

Contribution ID: **96** Type: **not specified**

Electromagnetic physics

Saturday, 15 September 2007 09:00 (25 minutes)

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

Session Classification: Saturday Plenary 1 - News from Geant4

Contribution ID: **98** Type: **not specified**

Geant4 Workshop/Collaboration Meeting Goals

Monday, 17 September 2007 10:30 (30 minutes)

Session Classification: Geant4 Collaboration Meeting - Plenary 1 Monday

Contribution ID: **99** Type: **not specified**

Key issues from Users days, Technical Forum

Contribution ID: **100** Type: **not specified**

Key issues from Review 2007

Monday, 17 September 2007 09:00 (45 minutes)

Presenter: Dr APOSTOLAKIS, John (CERN)

Session Classification: Geant4 Collaboration Meeting - Plenary 1 Monday

Contribution ID: **101** Type: **not specified**

Space : Common challenges, issues arising from integration G4

Friday, 14 September 2007 09:45 (20 minutes)

Presenter: LEI, Fan (Unknown)

Session Classification: Tools using GEANT4

Contribution ID: **102** Type: **not specified**

Discussion on commonalities & needs of engineering-type applications based on Geant4

Friday, 14 September 2007 10:05 (20 minutes)

Presenter: PANEL

Session Classification: Tools using GEANT4

Contribution ID: **103** Type: **not specified**

Tackling computing performance, legacy decisions and long-term maintainability

Contribution ID: **104** Type: **not specified**

New Benchmarks for HEP Geant4 CPU performance

Friday, 14 September 2007 11:30 (15 minutes)

Presenter: NIKITINA, Tatiana (CERN)

Session Classification: CPU Performance

Contribution ID: **105** Type: **not specified**

Performance and Numerical Stability

Friday, 14 September 2007 12:05 (15 minutes)

Primary authors: Dr ELVIRA, Daniel (FNAL); KOWALKOWSKI, Jim (FNAL); PATERNO, Marc (FNAL); FISCHLER, Mark (FNAL)

Presenter: Dr ELVIRA, Daniel (FNAL)

Session Classification: CPU Performance

Contribution ID: **106** Type: **not specified**

Recommendations for improving application performance

Friday, 14 September 2007 12:25 (10 minutes)

Presenter: HOWARD, Alexander (Unknown)

Session Classification: CPU Performance

Contribution ID: **107** Type: **not specified**

Discussion on CPU Performance

Friday, 14 September 2007 12:40 (20 minutes)

Session Classification: CPU Performance

Contribution ID: **108** Type: **not specified**

Visit railway museums

Sunday, 16 September 2007 11:00 (1 hour)

Session Classification: Excursion am

Contribution ID: **110** Type: **not specified**

CALICE report

Thursday, 13 September 2007 11:30 (30 minutes)

Presenter: Dr WATSON, Nigel K. (Univercity of Birmingham)

Session Classification: Plenary Session 2 - Users Session

Contribution ID: **114** Type: **not specified**

Extension of Geant4 particles: hyper-nuclei / anti-nuclei

Tuesday, 18 September 2007 10:00 (20 minutes)

Presenter: KURASHIGE, Hisaya (Kobe University)

Session Classification: Kernel

Contribution ID: **115** Type: **not specified**

Geometry and Field: new features and developments

Tuesday, 18 September 2007 10:20 (20 minutes)

Presenter: NIKITINA, Tatiana (Universite de Franche-Comte)

Session Classification: Kernel

Contribution ID: **116** Type: **not specified**

Status of development for Biasing and Scoring

Tuesday, 18 September 2007 10:40 (20 minutes)

Presenters: Dr TINSLAY, Jane (SLAC); ASAI, Makoto (SLAC)

Session Classification: Kernel

Contribution ID: **117** Type: **not specified**

New developments in Geant4 hadronic physics

Thursday, 13 September 2007 09:30 (15 minutes)

Presenter: WRIGHT, Dennis Herbert (Stanford University)

Session Classification: Plenary Session 1

Contribution ID: **118** Type: **not specified**

Event biasing in Geant4

Thursday, 13 September 2007 09:45 (15 minutes)

Presenter: HOWARD, Alexander (Unknown)

Session Classification: Plenary Session 1

Contribution ID: **119** Type: **not specified**

Liege Cascade/ABLA Progress Report

Tuesday, 18 September 2007 16:00 (20 minutes)

Presenter: Mr HEIKKINEN, Aatos (Helsinki Institute of Physics)

Session Classification: Hadronic 3 - New Hadronic Models

Contribution ID: **120** Type: **not specified**

CHIPS R&D for Hadronic Applications

Tuesday, 18 September 2007 16:20 (20 minutes)

Presenter: Dr KOSOV, Mikhail (CERN, ITEP(MOSCOW))

Session Classification: Hadronic 3 - New Hadronic Models

Contribution ID: **121** Type: **not specified**

Heavy Ion Progress Report

Tuesday, 18 September 2007 16:40 (20 minutes)

Presenter: Dr KOI, Tatsumi (SLAC)

Session Classification: Hadronic 3 - New Hadronic Models

Contribution ID: **122** Type: **not specified**

Diffuse Optical Model for Hadron-Nucleus Elastic Scattering

Tuesday, 18 September 2007 17:00 (20 minutes)

Presenter: GRICHINE, Vladimir (P.N. Lebedev Institute of Physics (FIAN))

Session Classification: Hadronic 3 - New Hadronic Models

Contribution ID: **123** Type: **not specified**

RPG Model

Tuesday, 18 September 2007 17:20 (10 minutes)

Presenter: Dr WRIGHT, Dennis (SLAC)

Session Classification: Hadronic 3 - New Hadronic Models

Contribution ID: **124** Type: **not specified**

Discussion

Tuesday, 18 September 2007 17:30 (30 minutes)

Session Classification: Hadronic 3 - New Hadronic Models

Contribution ID: **125** Type: **not specified**

New Geant4 Models for Muon Nuclear Interactions

Thursday, 13 September 2007 16:20 (20 minutes)

Presenter: Dr KOSOV, Mikhail (CERN, ITEP(MOSCOW))

Session Classification: Parallel Session 1 (b) - Low Background Experiments

Contribution ID: **126** Type: **not specified**

Introduction - kernel structure, user classes

Friday, 14 September 2007 16:00 (30 minutes)

Primary author: ASAI, Makoto (SLAC)

Session Classification: Tutorials

Contribution ID: **127** Type: **not specified**

Geometry - solid, logical volume, physical volume

Friday, 14 September 2007 16:45 (45 minutes)

Primary author: ASAI, Makoto (SLAC)

Session Classification: Tutorials

Contribution ID: **128** Type: **not specified**

Primary particle

Friday, 14 September 2007 17:30 (15 minutes)

Primary author: ASAI, Makoto (SLAC)

Session Classification: Tutorials

Contribution ID: **129** Type: **not specified**

EM field

Friday, 14 September 2007 17:45 (15 minutes)

Primary author: ASAI, Makoto (SLAC)

Session Classification: Tutorials

Contribution ID: **130** Type: **not specified**

Overview of Processes and Physics List

Saturday, 15 September 2007 14:00 (15 minutes)

Primary author: Dr WRIGHT, Dennis (SLAC)

Session Classification: Tutorial

Contribution ID: **131** Type: **not specified**

EM physics

Saturday, 15 September 2007 14:15 (45 minutes)

Primary author: IVANTCHENKO, Vladimir (CERN)

Session Classification: Tutorial

Contribution ID: **132** Type: **not specified**

Hadronic physics - 1

Saturday, 15 September 2007 15:00 (30 minutes)

Primary author: WRIGHT, Dennis Herbert (Stanford University)

Session Classification: Tutorial

Contribution ID: **133** Type: **not specified**

Hadronic physics - 2

Saturday, 15 September 2007 16:00 (30 minutes)

Primary author: WRIGHT, Dennis Herbert (Stanford University)

Session Classification: Tutorial

Contribution ID: **134** Type: **not specified**

Scoring, stacking

Saturday, 15 September 2007 16:30 (30 minutes)

Primary author: ASAI, Makoto (SLAC)

Session Classification: Tutorial

Contribution ID: **135** Type: **not specified**

GUI / VIS overview

Saturday, 15 September 2007 17:00 (20 minutes)

Primary author: PERL, Joseph

Session Classification: Tutorial

Contribution ID: **136** Type: **not specified**

Examples and documents

Saturday, 15 September 2007 17:20 (20 minutes)

Primary author: PERL, Joseph

Session Classification: Tutorial

Contribution ID: **137** Type: **not specified**

Introduction to Geant4 applications

Saturday, 15 September 2007 17:40 (20 minutes)

Primary author: PERL, Joseph

Session Classification: Tutorial

Contribution ID: **138** Type: **not specified**

Geometrical Biasing Progress report

Tuesday, 18 September 2007 14:00 (20 minutes)

Primary author: HOWARD, Alexander (Unknown)

Presenter: HOWARD, Alexander (Unknown)

Session Classification: Biasing

Contribution ID: **139** Type: **not specified**

Progress report

Primary author: Dr TINSLAY, Jane (SLAC)

Presenter: Dr TINSLAY, Jane (SLAC)

Contribution ID: **140** Type: **not specified**

Progress report on Scoring

Tuesday, 18 September 2007 14:20 (10 minutes)

Primary author: ASO, Tsukasa (TNCMT)

Presenters: ASAI, Makoto (SLAC); ASO, Tsukasa (TNCMT)

Session Classification: Biasing

Contribution ID: **141** Type: **not specified**

New design of physics list for event biasing

Tuesday, 18 September 2007 14:30 (30 minutes)

Primary author: Dr TINSLAY, Jane (SLAC)

Presenter: Dr TINSLAY, Jane (SLAC)

Session Classification: Biasing

Contribution ID: **142** Type: **not specified**

Discussion

Tuesday, 18 September 2007 15:00 (30 minutes)

Session Classification: Biasing

Contribution ID: **143** Type: **not specified**

Atlas experience with Geant4 performance

Friday, 14 September 2007 11:45 (15 minutes)

Presenter: DI SIMONE, Andrea (European Organization for Nuclear Research (CERN))

Session Classification: CPU Performance

Contribution ID: **144** Type: **not specified**

FASTRAD

Friday, 14 September 2007 14:00 (30 minutes)

Presenter: POURROUQUET, Pierre (TRAD)

Session Classification: Parallel Session 2- Aero/Space Applications

Contribution ID: **145** Type: **not specified**

MARSREM

Friday, 14 September 2007 14:30 (30 minutes)

Presenter: Dr TRUSCOTT, Pete (Qinetiq)

Session Classification: Parallel Session 2- Aero/Space Applications

Contribution ID: **146** Type: **not specified**

LHC Shower Update

Friday, 14 September 2007 16:00 (20 minutes)

Presenter: Dr RIBON, Alberto (CERN)

Session Classification: Physics Validation and Shower Shapes

Contribution ID: **147** Type: **not specified**

New CHIPS Implementations of High Energy Diffraction and Coherent Charge Exchange

Friday, 14 September 2007 16:20 (20 minutes)

Presenter: Dr KOSOV, Mikhail (CERN, ITEP(MOSCOW))

Session Classification: Physics Validation and Shower Shapes

Contribution ID: **148** Type: **not specified**

New CMS Measurements of Transverse and Longitudinal Shower Shapes

Friday, 14 September 2007 16:40 (20 minutes)

Presenter: BANERJEE, Sunanda (Tata Institute of Fundamental Research (TIFR))

Session Classification: Physics Validation and Shower Shapes

Contribution ID: **149** Type: **not specified**

Geant4 Hadronic Validation efforts at FNAL

Friday, 14 September 2007 17:00 (20 minutes)

Presenter: BANERJEE, Sunanda (Tata Institute of Fundamental Research (TIFR))

Session Classification: Physics Validation and Shower Shapes

Contribution ID: **150** Type: **not specified**

Validation Tests

Friday, 14 September 2007 17:20 (20 minutes)

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

Session Classification: Physics Validation and Shower Shapes

Contribution ID: **151** Type: **not specified**

Comparison of G4 Processes with p (40 MeV) + A Data

Friday, 14 September 2007 17:40 (20 minutes)

Presenter: Dr KOSOV, Mikhail (CERN, ITEP(MOSCOW))

Session Classification: Physics Validation and Shower Shapes

Contribution ID: **152** Type: **not specified**

Report from the Precompound Workshop

Monday, 17 September 2007 11:30 (15 minutes)

Presenter: FOLGER, Gunter (CERN)

Session Classification: Hadronic Physics: Validation and Development

Contribution ID: **153** Type: **not specified**

Implementation of CHIPS in Geant4

Monday, 17 September 2007 11:45 (30 minutes)

Presenter: Dr KOSOV, Mikhail (CERN, ITEP(MOSCOW))

Session Classification: Hadronic Physics: Validation and Development

Contribution ID: **154** Type: **not specified**

Neutron Benchmarks, including TARC

Monday, 17 September 2007 12:15 (20 minutes)

Presenter: HOWARD, Alexander (Unknown)

Session Classification: Hadronic Physics: Validation and Development

Contribution ID: **155** Type: **not specified**

Collaboration-wide Hadronics Discussion (Validation, Shower Shapes, Physics Lists, etc.)

Monday, 17 September 2007 12:35 (25 minutes)

Session Classification: Hadronic Physics: Validation and Development

Contribution ID: **156** Type: **not specified**

G4PreCompound Improvements

Monday, 17 September 2007 16:00 (20 minutes)

Presenter: Prof. QUESADA, Jose Manuel (University of Seville)

Session Classification: Hadronic 2 - Precompound and Evaporation Models

Contribution ID: **157** Type: **not specified**

Simulation of Precompound/Evaporation in CHIPS Interfaces

Monday, 17 September 2007 16:20 (20 minutes)

Presenter: Dr KOSOV, Mikhail (CERN, ITEP(MOSCOW))

Session Classification: Hadronic 2 - Precompound and Evaporation Models

Contribution ID: **158** Type: **not specified**

Precompound/De-excitation Interfaces

Monday, 17 September 2007 16:40 (20 minutes)

Presenter: HOWARD, Alexander (Unknown)

Session Classification: Hadronic 2 - Precompound and Evaporation Models

Contribution ID: **159** Type: **not specified**

Discussion and Planning

Monday, 17 September 2007 17:00 (30 minutes)

Session Classification: Hadronic 2 - Precompound and Evaporation Models

Contribution ID: **160** Type: **not specified**

CHIPS Cross Sections for Nuclear-Nuclear Interactions

Monday, 17 September 2007 14:00 (20 minutes)

Presenter: Dr KOSOV, Mikhail (CERN, ITEP(MOSCOW))

Session Classification: Hadronic 1 - Cross Sections and Long Standing Issues

Contribution ID: **161** Type: **not specified**

CMS Multiplicity Problem

Monday, 17 September 2007 14:20 (15 minutes)

Presenter: Dr WRIGHT, Dennis (SLAC)

Session Classification: Hadronic 1 - Cross Sections and Long Standing Issues

Contribution ID: **162** Type: **not specified**

Bertini Cascade Problems and Fixes

Monday, 17 September 2007 14:35 (15 minutes)

Presenter: Dr WRIGHT, Dennis (SLAC)

Session Classification: Hadronic 1 - Cross Sections and Long Standing Issues

Contribution ID: **163** Type: **not specified**

Implementation of Isotopic Cross Sections

Monday, 17 September 2007 14:50 (10 minutes)

Presenter: Dr WRIGHT, Dennis (SLAC)

Session Classification: Hadronic 1 - Cross Sections and Long Standing Issues

Contribution ID: **164** Type: **not specified**

LEP Problems

Monday, 17 September 2007 15:00 (30 minutes)

Presenter: JONES, Fred (TRIUMF Tri-University Meson Facilit (TRIUMF))

Session Classification: Hadronic 1 - Cross Sections and Long Standing Issues

Contribution ID: **165** Type: **not specified**

The Hadronic Validation Effort at Catania

Presenter: Dr ROMANO, Francesco (LNS/INFN)

Contribution ID: **166** Type: **not specified**

How to use the Geometrical Safety

Wednesday, 19 September 2007 09:00 (20 minutes)

Presenter: Dr APOSTOLAKIS, John (CERN)

Session Classification: Geometrical Safety and EM physics processes

Contribution ID: **167** Type: **not specified**

How Geometrical Safety is used by EM processes

Wednesday, 19 September 2007 09:20 (20 minutes)

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

Session Classification: Geometrical Safety and EM physics processes

Contribution ID: **168** Type: **not specified**

What happens in reality

Wednesday, 19 September 2007 09:40 (20 minutes)

Presenter: HOWARD, Alexander (Unknown)

Session Classification: Geometrical Safety and EM physics processes

Contribution ID: **169** Type: **not specified**

Status of Benchmarks in System Testing

Wednesday, 19 September 2007 10:00 (15 minutes)

Presenter: MCLAREN, Ian (CERN)

Session Classification: CPU Benchmarks

Contribution ID: **170** Type: **not specified**

System Benchmarks

Wednesday, 19 September 2007 10:30 (15 minutes)

Presenter: Dr RIBON, Alberto (CERN)

Session Classification: CPU Benchmarks

Contribution ID: **171** Type: **not specified**

Benchmarks for Propagation in Field

Wednesday, 19 September 2007 10:15 (15 minutes)

Presenter: NIKITINA, Tatiana (Universite de Franche-Comte)

Session Classification: CPU Benchmarks

Contribution ID: **172** Type: **not specified**

Policy for Benchmarks - Discussion

Wednesday, 19 September 2007 10:45 (15 minutes)

Definition of policy for benchmarks:
- Benchmarks to be considered & versioning on CVS
- Frequency for running benchmarks, automation & comparisons
- Selection of system/platforms, CPU load, system upgrades & network exposure
- Update of reference measurements

Session Classification: CPU Benchmarks

Contribution ID: **173** Type: **not specified**

Discussion

Friday, 14 September 2007 15:00 (30 minutes)

Session Classification: Parallel Session 1 - Low-Energy & Optical

Contribution ID: **174** Type: **not specified**

Status of EM Standard

Tuesday, 18 September 2007 09:00 (20 minutes)

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

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

Session Classification: EM Physics

Contribution ID: **175** Type: **not specified**

Multiple Scattering

Tuesday, 18 September 2007 09:30 (15 minutes)

Primary author: URBAN, Laszlo (Unknown)

Presenter: URBAN, Laszlo (Unknown)

Session Classification: EM Physics

Contribution ID: **176** Type: **not specified**

Fano Cavity

Tuesday, 18 September 2007 09:45 (15 minutes)

Primary author: MAIRE, Michel (LAPP)

Co-author: Mrs ELLES, Sabine (LAPP)

Presenter: MAIRE, Michel (LAPP)

Session Classification: EM Physics

Contribution ID: **177** Type: **not specified**

EM Polarisation library - status, progress, plans

Tuesday, 18 September 2007 14:00 (30 minutes)

Primary author: Dr SCHAELICKE, Andreas (DESY Zeuthen)

Presenter: Dr SCHAELICKE, Andreas (DESY Zeuthen)

Session Classification: Electromagnetic topics

Contribution ID: **178** Type: **not specified**

Comparison of Geant4 results to EGSnrc and measured data in large field electron dose distributions

Tuesday, 18 September 2007 14:30 (20 minutes)

Primary author: PERL, Joseph (Unknown)

Presenter: PERL, Joseph (Unknown)

Session Classification: Electromagnetic topics

Contribution ID: **179** Type: **not specified**

Geant4 energy loss of proton, electron and magnetic monopole

Tuesday, 18 September 2007 15:10 (20 minutes)

Primary author: Mr VLADYMYROV, Mykhailo (Moscow Lebedev inst)

Presenter: Mr VLADYMYROV, Mykhailo (Moscow Lebedev inst)

Session Classification: Electromagnetic topics

Contribution ID: **180** Type: **not specified**

Single Coulomb scattering process

Wednesday, 19 September 2007 10:00 (20 minutes)

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

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

Session Classification: Electromagnetic topics

Contribution ID: **181** Type: **not specified**

Diffuse elastic scattering model for charged particles

Wednesday, 19 September 2007 10:20 (20 minutes)

Primary author: GRICHINE, Vladimir (P.N. Lebedev Institute of Physics (FIAN))

Presenter: GRICHINE, Vladimir (P.N. Lebedev Institute of Physics (FIAN))

Session Classification: Electromagnetic topics

Contribution ID: **184** Type: **not specified**

CHIPS approximation of proton-nuclear Coulomb scattering

Wednesday, 19 September 2007 10:40 (20 minutes)

Primary author: Dr KOSOV, Mikhail (CERN, ITEP(MOSCOW))

Presenter: Dr KOSOV, Mikhail (CERN, ITEP(MOSCOW))

Session Classification: Electromagnetic topics

Contribution ID: **185** Type: **not specified**

Hadronic Physics

Saturday, 15 September 2007 09:30 (35 minutes)

Presenter: WRIGHT, Dennis Herbert (Stanford University)

Session Classification: Saturday Plenary 1 - News from Geant4

Contribution ID: **186** Type: **not specified**

Error Propagation in Geant4 9.0

Saturday, 15 September 2007 10:45 (10 minutes)

Presenter: Mr ARCE, Pedro (CIEMAT)

Session Classification: Saturday Plenary 1 - News from Geant4

Contribution ID: **187** Type: **not specified**

Fluctuations of energy loss

Tuesday, 18 September 2007 09:20 (10 minutes)

Primary author: URBAN, Laszlo (Unknown)

Presenter: URBAN, Laszlo (Unknown)

Session Classification: EM Physics

Contribution ID: **188** Type: **not specified**

Carbon ion depth dose profile in HIBMC facility

Tuesday, 18 September 2007 14:50 (20 minutes)

Primary author: TOSHITO, Toshiyuki (KEK)

Presenter: TOSHITO, Toshiyuki (KEK)

Session Classification: Electromagnetic topics

Contribution ID: **189** Type: **not specified**

Geant4 Web Application - its design and use

Monday, 17 September 2007 16:00 (20 minutes)

Primary author: Prof. YOSHIDA, Hajime (Naruto University of Education)

Co-authors: Prof. AMAKO, Katsuya (KEK); Dr MURAKAMI, Koichi (KEK)

Presenter: Prof. YOSHIDA, Hajime (Naruto University of Education)

Session Classification: Interfaces : Working Session

Contribution ID: **190** Type: **not specified**

Python Interface, Geant4 Education and Geant4 on Web

Monday, 17 September 2007 16:20 (20 minutes)

Primary author: Dr MURAKAMI, Koichi (KEK)

Presenter: Dr MURAKAMI, Koichi (KEK)

Session Classification: Interfaces : Working Session

Contribution ID: **191** Type: **not specified**

Binary Install and Configuration Tools

Tuesday, 18 September 2007 17:00 (20 minutes)

Presenter: Dr MORGAN, Ben (University of Warwick)

Session Classification: Configuration Management

Contribution ID: **192** Type: **not specified**

Discussion

Tuesday, 18 September 2007 17:20 (40 minutes)

Session Classification: Configuration Management

Contribution ID: **193** Type: **not specified**

Documentation on the Web

Monday, 17 September 2007 16:40 (20 minutes)

Primary author: Prof. AMAKO, Katsuya (KEK)

Presenter: Prof. AMAKO, Katsuya (KEK)

Session Classification: Interfaces : Working Session

Contribution ID: **194** Type: **not specified**

Overall Vis Status Summary

Tuesday, 18 September 2007 11:30 (10 minutes)

Primary author: PERL, Joseph

Presenter: PERL, Joseph

Session Classification: Visualisation and Interfaces

Contribution ID: **195** Type: **not specified**

Qt

Tuesday, 18 September 2007 11:40 (5 minutes)

Primary author: Mr BARRAND, Guy (LAL, Orsay)

Presenter: PERL, Joseph

Session Classification: Visualisation and Interfaces

Contribution ID: **196** Type: **not specified**

Smooth Trajectories, Event Keeping, Picking in OGLX

Tuesday, 18 September 2007 11:45 (15 minutes)

Primary author: ALLISON, John

Presenter: ALLISON, John

Session Classification: Visualisation and Interfaces

Contribution ID: **197** Type: **not specified**

Improvements in Intercoms, Interfaces, Geant4Py examples, and Web Application

Tuesday, 18 September 2007 12:00 (15 minutes)

Presenter: MURAKAMI, Koichi (High Energy Accelerator Research Organization (KEK))

Session Classification: Visualisation and Interfaces

Contribution ID: **198** Type: **not specified**

Discussion of issues

Monday, 17 September 2007 09:45 (45 minutes)

Session Classification: Geant4 Collaboration Meeting - Plenary 1 Monday

Contribution ID: **199** Type: **not specified**

Summary from EM parallel Sessions

Wednesday, 19 September 2007 11:30 (10 minutes)

Presenter: Dr SCHAELICKE, Andreas (DESY Zeuthen)

Session Classification: Reports from Parallel Sessions - 1

Contribution ID: **200** Type: **not specified**

Summary from Interfaces session

Wednesday, 19 September 2007 11:40 (5 minutes)

Presenter: Prof. YOSHIDA, Hajime (NARUTO UNIVERSITY OF EDUCATION)

Session Classification: Reports from Parallel Sessions - 1

Contribution ID: **201** Type: **not specified**

Summary of GATE/Medical parallel sessions

Contribution ID: **202** Type: **not specified**

Summary of GATE/Medical parallel sessions

Wednesday, 19 September 2007 11:45 (10 minutes)

Presenter: PERL, Joseph

Session Classification: Reports from Parallel Sessions - 1

Contribution ID: **203** Type: **not specified**

Summary from Hadronic Physics Sessions

Wednesday, 19 September 2007 12:00 (10 minutes)

Presenters: WRIGHT, Dennis Herbert (Stanford University); Dr WRIGHT, Dennis (SLAC)

Session Classification: Reports from Parallel Sessions - 1

Contribution ID: **204** Type: **not specified**

Summary from Configuration session

Wednesday, 19 September 2007 11:55 (5 minutes)

Presenter: MORGAN, Ben (University of Warwick, UK)

Session Classification: Reports from Parallel Sessions - 1

Contribution ID: **205** Type: **not specified**

Summary from 2nd Hadronic Physics Session

Wednesday, 19 September 2007 12:10 (5 minutes)

Presenter: FOLGER, Gunter (CERN)

Session Classification: Reports from Parallel Sessions - 1

Contribution ID: **206** Type: **not specified**

Summary from Aero/Space Applications

Wednesday, 19 September 2007 12:15 (5 minutes)

Presenter: LEI, Fan

Session Classification: Reports from Parallel Sessions - 1

Contribution ID: **207** Type: **not specified**

Summary from Hadronic Physics Session on Cross Sections and Long Standing Issues

Wednesday, 19 September 2007 12:20 (5 minutes)

Presenter: Mr HEIKKINEN, Aatos (Helsinki Institute of Physics)

Session Classification: Reports from Parallel Sessions - 1

Contribution ID: **208** Type: **not specified**

Summary from System Testing parallel session

Wednesday, 19 September 2007 12:25 (5 minutes)

Presenter: FOLGER, Gunter (CERN)

Session Classification: Reports from Parallel Sessions - 1

Contribution ID: **209** Type: **not specified**

Summary from CPU Benchmarks parallel session

Wednesday, 19 September 2007 14:10 (10 minutes)

Presenter: Dr COSMO, Gabriele (CERN)

Session Classification: Reports from Parallel Sessions - 2

Contribution ID: **210** Type: **not specified**

Summary from Biasing and Scoring parallel session

Wednesday, 19 September 2007 14:00 (10 minutes)

Presenter: ASAI, Makoto (SLAC)

Session Classification: Reports from Parallel Sessions - 2

Contribution ID: **211** Type: **not specified**

Summary from Geometrical Safety parallel session

Wednesday, 19 September 2007 14:25 (5 minutes)

Presenter: Dr APOSTOLAKIS, John (CERN)

Session Classification: Reports from Parallel Sessions - 2

Contribution ID: **212** Type: **not specified**

Summary from New Hadronic Models parallel session

Wednesday, 19 September 2007 14:20 (5 minutes)

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

Session Classification: Reports from Parallel Sessions - 2