

# Joint WLCG & HSF Workshop 2018



## Report of Contributions

Contribution ID: 1

Type: **not specified**

# Welcome and Introduction

*Monday, 26 March 2018 10:00 (20 minutes)*

**Presenters:** DORIA, Alessandra (INFN, Napoli (IT)); Prof. MANFREDI, Gaetano (Federico II University)

**Session Classification:** Opening Plenary Session

Contribution ID: 2

Type: **not specified**

# HEP science goals for the next decade

*Monday, 26 March 2018 10:20 (20 minutes)*

**Presenter:** SEXTON-KENNEDY, Elizabeth (Fermi National Accelerator Lab. (US))

**Session Classification:** Opening Plenary Session

Contribution ID: 3

Type: **not specified**

## US NSF and DOE current activities and plans

*Monday, 26 March 2018 11:35 (20 minutes)*

**Presenters:** ELMER, Peter (Princeton University (US)); CHILDERS, Taylor (Argonne National Laboratory (US))

**Session Classification:** Opening Plenary Session

Contribution ID: 4

Type: **not specified**

## Simulation for HEP (TBC)

**Session Classification:** HEP Use Cases

Contribution ID: 5

Type: **not specified**

## HSF Vision for the Future

**Session Classification:** Plenaries

Contribution ID: 6

Type: **not specified**

## WLCG Vision for the Future

**Session Classification:** Plenaries

Contribution ID: 7

Type: **not specified**

## WG Summaries

**Session Classification:** Plenaries

Contribution ID: 8

Type: **not specified**

## **Buses for Napoli Capodichino Airport and Rome Fiumicino Airport**

*Thursday, 29 March 2018 13:00 (5 minutes)*

Contribution ID: 9

Type: **not specified**

## CWP Roadmap

*Monday, 26 March 2018 10:55 (40 minutes)*

**Presenter:** RODRIGUES, Eduardo (University of Cincinnati (US))

**Session Classification:** Opening Plenary Session

Contribution ID: **10**

Type: **not specified**

## **Institute welcome**

**Session Classification:** Opening Plenary Session

Contribution ID: **11**

Type: **not specified**

## Discussion

*Monday, 26 March 2018 11:55 (35 minutes)*

**Session Classification:** Opening Plenary Session

Contribution ID: **13**

Type: **not specified**

## Introduction

*Tuesday, 27 March 2018 09:00 (5 minutes)*

**Presenters:** GIRONE, Maria (CERN); CAMPANA, Simone (CERN)

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: 14

Type: **not specified**

## Highlights of the Rucio workshop

*Tuesday, 27 March 2018 09:05 (20 minutes)*

**Presenters:** LASSNIG, Mario (CERN); BARISITS, Martin (CERN)

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: 15

Type: **not specified**

## Data Lakes R&D: high level goals

*Tuesday, 27 March 2018 09:40 (15 minutes)*

**Presenter:** ESPINAL CURULL, Xavier (CERN)

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: **16**

Type: **not specified**

## **Performance metrics and measurements in the Data Lake model**

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: 17

Type: **not specified**

## A Transfer Ecosystem for the WLCG

*Tuesday, 27 March 2018 09:55 (15 minutes)*

**Presenter:** BOCKELMAN, Brian Paul (University of Nebraska Lincoln (US))

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: **18**

Type: **not specified**

## **Distributed Storage and Data Lakes: ideas from dCache experts**

*Wednesday, 28 March 2018 16:20 (20 minutes)*

**Presenters:** FUHRMANN, Patrick (Deutsches Elektronen-Synchrotron (DE)); Mr MKRTCHYAN, Tigran (DESY)

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: **19**

Type: **not specified**

## **Distributed Storage and Data Lakes: ideas from EOS experts**

*Wednesday, 28 March 2018 16:00 (20 minutes)*

**Presenter:** PETERS, Andreas Joachim (CERN)

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: 20

Type: **not specified**

## Using Capability-based authorization for HTTP-based Third Party Copies

*Wednesday, 28 March 2018 16:50 (20 minutes)*

**Presenter:** BOCKELMAN, Brian Paul (University of Nebraska Lincoln (US))

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: 21

Type: **not specified**

## **data access and data transfer protocols**

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: 22

Type: **not specified**

## **caching technologies: HTTP caches**

*Wednesday, 28 March 2018 17:50 (15 minutes)*

**Presenter:** PARDI, Silvio (INFN)

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: 23

Type: **not specified**

## Lightning Talk 2 (Belle II)

*Tuesday, 27 March 2018 13:40 (10 minutes)*

**Presenters:** Dr RITTER, Martin (LMU / Cluster Universe); RITTER, Martin (LMU Munich); Dr TBD

**Session Classification:** Training and Careers

Contribution ID: 24

Type: **not specified**

## Evolution of technology and markets

*Monday, 26 March 2018 13:30 (40 minutes)*

**Primary author:** PANZER-STEINDEL, Bernd (CERN)

**Presenter:** PANZER-STEINDEL, Bernd (CERN)

**Session Classification:** Technology Watch

Contribution ID: 25

Type: **not specified**

## Q&A, discussion

**Session Classification:** Technology Watch

Contribution ID: 26

Type: **not specified**

## Proposal for technology watch WG

*Monday, 26 March 2018 14:50 (20 minutes)*

**Primary author:** MEINHARD, Helge (CERN)

**Presenter:** MEINHARD, Helge (CERN)

**Session Classification:** Technology Watch

Contribution ID: 27

Type: **not specified**

## Q&A, Discussion

**Session Classification:** Technology Watch

Contribution ID: **28**

Type: **not specified**

## Topics for R&D on technology watch

*Monday, 26 March 2018 14:20 (30 minutes)*

**Primary author:** PANZER-STEINDEL, Bernd (CERN)

**Presenter:** PANZER-STEINDEL, Bernd (CERN)

**Session Classification:** Technology Watch

Contribution ID: 29

Type: **not specified**

## Q&A, Discussion

**Session Classification:** Technology Watch

Contribution ID: 30

Type: **not specified**

## Slot for sponsor talks (if approved)

**Session Classification:** Technology Watch

Contribution ID: **31**

Type: **not specified**

## **Overview of CWP paper from WG Data Analysis and Interpretation**

*Tuesday, 27 March 2018 16:00 (20 minutes)*

**Presenter:** NEUBAUER, Mark (Univ. Illinois at Urbana Champaign (US))

**Session Classification:** Analysis Facilities and Use Cases

Contribution ID: 32

Type: **not specified**

## Spark-like and query-like analysis systems and tools

*Tuesday, 27 March 2018 16:20 (20 minutes)*

**Presenter:** PIVARSKI, Jim (Princeton University)

**Session Classification:** Analysis Facilities and Use Cases

Contribution ID: **33**

Type: **not specified**

## HPC analyses

*Tuesday, 27 March 2018 16:40 (20 minutes)*

**Presenter:** KHRISTENKO, Viktor (CERN)

**Session Classification:** Analysis Facilities and Use Cases

Contribution ID: 34

Type: **not specified**

## Real-time analyses - the LHCb case

*Tuesday, 27 March 2018 17:00 (20 minutes)*

**Presenter:** MATEV, Rosen (CERN)

**Session Classification:** Analysis Facilities and Use Cases

Contribution ID: 35

Type: **not specified**

## **Analyses with SWAN and docker**

*Tuesday, 27 March 2018 17:20 (20 minutes)*

**Presenter:** MATO VILA, Pere (CERN)

**Session Classification:** Analysis Facilities and Use Cases

Contribution ID: 36

Type: **not specified**

## Open discussion on future avenues and collaboration

*Tuesday, 27 March 2018 17:40 (20 minutes)*

**Presenters:** RODRIGUES, Eduardo (University of Cincinnati (US)); GUTSCHE, Oliver (Fermi National Accelerator Lab. (US))

**Session Classification:** Analysis Facilities and Use Cases

Contribution ID: 37

Type: **not specified**

## Certification: Motivation, Benefits and Status

*Tuesday, 27 March 2018 13:30 (20 minutes)*

**Presenters:** SHIERS, Jamie (CERN); HILDRETH, Mike (University of Notre Dame (US)); HILDRETH, Mike (Department of Physics-College of Science-University of Notre Da)

**Session Classification:** Data Preservation for HEP

Contribution ID: 38

Type: **not specified**

## How HL-LHC challenges inform WM R&D: ATLAS view

*Tuesday, 27 March 2018 13:30 (20 minutes)*

**Presenters:** DI GIROLAMO, Alessandro (CERN); COSTANZO, Davide (University of Sheffield (GB)); ELMSHEUSER, Johannes (Brookhaven National Laboratory (US)); WENAUS, Torre (Brookhaven National Laboratory (US))

**Session Classification:** Workload Management

Contribution ID: 39

Type: **not specified**

## **How HL-LHC challenges inform WM R&D: CMS view**

*Tuesday, 27 March 2018 13:50 (20 minutes)*

**Presenter:** WUERTHWEIN, Frank (UCSD)

**Session Classification:** Workload Management

Contribution ID: 40

Type: **not specified**

## **Roadmap towards WM standardization for HL-LHC: ARC perspective**

*Tuesday, 27 March 2018 14:10 (20 minutes)*

**Presenter:** FILIPCIC, Andrej (Jozef Stefan Institute (SI))

**Session Classification:** Workload Management

Contribution ID: 41

Type: **not specified**

## **Roadmap towards WM standardization for HL-LHC: PanDA perspective**

*Tuesday, 27 March 2018 14:30 (20 minutes)*

**Presenters:** KLIMENTOV, Alexei (Brookhaven National Laboratory (US)); DE, Kaushik (University of Texas at Arlington (US))

**Session Classification:** Workload Management

Contribution ID: 42

Type: **not specified**

## Trust & Policies

*Wednesday, 28 March 2018 13:30 (25 minutes)*

GDPR Implications + Policy Harmonisation

**Presenter:** KELSEY, David (Science and Technology Facilities Council STFC (GB))

**Session Classification:** Security

Contribution ID: 43

Type: **not specified**

## Authentication and Authorisation

*Wednesday, 28 March 2018 13:55 (25 minutes)*

Authorisation Working Group Status

**Presenter:** LITMAATH, Maarten (CERN)

**Session Classification:** Security

Contribution ID: 44

Type: **not specified**

## Operational Security

*Wednesday, 28 March 2018 14:20 (40 minutes)*

- Requirements for operational security in the future
- Incident Response in new infrastructures
- Threat Intelligence
- Technology (inc. SOC WG status)
- Traceability
- IPv6 Security Aspects

**Presenters:** CROOKS, David (University of Glasgow (GB)); BRILLAULT, Vincent (CERN)

**Session Classification:** Security

Contribution ID: 45

Type: **not specified**

## Discussion

*Wednesday, 28 March 2018 15:00 (30 minutes)*

**Session Classification:** Security

Contribution ID: 46

Type: **not specified**

## Visualization CWP paper status

*Wednesday, 28 March 2018 11:00 (5 minutes)*

**Presenters:** BIANCHI, Riccardo Maria (University of Pittsburgh (US)); MC CAULEY, Thomas (University of Notre Dame (US))

**Session Classification:** Visualisation

Contribution ID: 47

Type: **not specified**

## Project Discussion: Intro.

*Wednesday, 28 March 2018 11:05 (10 minutes)*

A summary of what we proposed in the CWP in terms of common development work for the future and how we can proceed:

- potential common base packages
- server-client architecture as a possible solution to circumvent the issues of data access (in-framework tools) and limited/skimmed data (standalone tools)

**Presenters:** BIANCHI, Riccardo Maria (University of Pittsburgh (US)); MC CAULEY, Thomas (University of Notre Dame (US))

**Session Classification:** Visualisation

Contribution ID: 48

Type: **not specified**

## **ATLAS Open Data apps: bringing the interactivity of the website to the desktop**

*Wednesday, 28 March 2018 11:45 (15 minutes)*

**Presenter:** SANCHEZ PINEDA, Arturo (Abdus Salam Int. Cent. Theor. Phys. (IT))

**Session Classification:** Visualisation

Contribution ID: 49

Type: **not specified**

## Hybrid Rendering System for Particle Collision Experimental Data Visualization

*Wednesday, 28 March 2018 11:15 (15 minutes)*

The main problems in visualizing the particle collision events are the amount of data needed for good visualization and the need for high-performance graphical hardware. To overcome the need of sending the large amount of data to the end-user as well as need for high-performance graphical hardware, we propose the hybrid rendering solution which renders the final image in two parts: (1) highly interactive visualization of basic experiment geometry rendered on client side and (2) high quality render of event details, which is rendered on server side. The final render image is combined from both images with use of different fusing techniques using depth buffer or importance buffer. The proposed approach solves multiple issues: (1) the need for sending a large amount of data to the client for purpose of visualization, (2) the need for high-performance graphical hardware on the client side, (3) allows the use of more complex rendering techniques and (4) improves the interactivity of the visualization.

---

### Speaker bio:

Ciril Bohak obtained his B.Sc., M.Sc., and Ph.D. in Computer and Information Science at the University of Ljubljana, Slovenia. His main research topics are Computer Graphics and Data Visualization. He is in charge of Med3D project - a web-based medical data visualization framework with support for remote collaboration and VR. He is also collaborating on LiDAR/LADAR point cloud data visualization with Kyungpook National University from South Korea.

Speaker's web page

**Primary authors:** Dr BOHAK, Ciril (University of Ljubljana, Faculty of Computer and Information Science); MAROLT, Matija (University of Ljubljana - Faculty of computer and information science)

**Presenter:** Dr BOHAK, Ciril (University of Ljubljana, Faculty of Computer and Information Science)

**Session Classification:** Visualisation

Contribution ID: 50

Type: **not specified**

## **New development in ROOT concerning web-based graphics, GUI and geometry display**

*Wednesday, 28 March 2018 11:30 (15 minutes)*

**Presenter:** LINEV, Sergey

**Session Classification:** Visualisation

Contribution ID: 51

Type: **not specified**

## **FPGAs as co-processors for reconstruction**

*Wednesday, 28 March 2018 09:00 (20 minutes)*

**Presenter:** FAERBER, Christian (CERN)

**Session Classification:** Programming for Concurrency and Co-Processors

Contribution ID: 52

Type: **not specified**

## **VecCore: Expressing HEP algorithms in terms of explicit SIMD types and operations**

*Wednesday, 28 March 2018 09:20 (20 minutes)*

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

**Session Classification:** Programming for Concurrency and Co-Processors

Contribution ID: 53

Type: **not specified**

## **Dask: distributed computing for scientific Python**

*Wednesday, 28 March 2018 09:40 (20 minutes)*

**Presenter:** Dr DURANT, Martin (Anaconda, Inc.)

**Session Classification:** Programming for Concurrency and Co-Processors

Contribution ID: 54

Type: **not specified**

## **Hydra: distributing mathematical kernels over OpenMP, CUDA and TBB**

**Presenter:** ALVES JUNIOR, Antonio Augusto (University of Cincinnati (US))

**Session Classification:** Programming for Concurrency and Co-Processors

Contribution ID: 55

Type: **not specified**

## **VecGeom in CMS, Muon g-2, Mu2e**

*Wednesday, 28 March 2018 16:40 (10 minutes)*

**Presenter:** ELVIRA, Victor Daniel (Fermi National Accelerator Lab. (US))

**Session Classification:** Simulation

Contribution ID: 56

Type: **not specified**

## Reducing CPU Consumption of Geant4 Simulation in ATLAS

*Wednesday, 28 March 2018 14:10 (20 minutes)*

**Presenter:** CHAPMAN, John Derek (University of Cambridge (GB))

**Session Classification:** Simulation

Contribution ID: 57

Type: **not specified**

## **Status and plans for the vectorised particle transport “demonstrator”**

*Wednesday, 28 March 2018 16:00 (20 minutes)*

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

**Session Classification:** Simulation

Contribution ID: 58

Type: **not specified**

## **Electromagnetic and Hadronic Physics requirements for detector simulation in 2020s**

*Wednesday, 28 March 2018 14:50 (20 minutes)*

**Presenter:** Dr HARIRI, Farah (CERN)

**Session Classification:** Simulation

Contribution ID: 59

Type: **not specified**

## Variance Reduction Techniques for HEP in Geant4

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

**Session Classification:** Simulation

Contribution ID: 60

Type: **not specified**

## **CaloGAN: a novel physics simulation with Neural Networks trained from Geant4 full-sims**

*Wednesday, 28 March 2018 17:10 (20 minutes)*

**Presenters:** NACHMAN, Ben (University of California Berkeley (US)); DE OLIVEIRA, Luke; PAGANINI, Michela (Yale University (US))

**Session Classification:** Simulation

Contribution ID: **61**

Type: **not specified**

# **Towards modularization and vectorization of Geant4 physics: a pilot study**

*Wednesday, 28 March 2018 15:10 (20 minutes)*

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

**Session Classification:** Simulation

Contribution ID: **62**

Type: **not specified**

## **Use of HPC resources with Geant4 simulations**

*Wednesday, 28 March 2018 17:30 (20 minutes)*

**Presenter:** DOTTL, Andrea (SLAC National Accelerator Laboratory (US))

**Session Classification:** Simulation

Contribution ID: **63**

Type: **not specified**

## **Performance metrics and measurements in the Data Lake model**

*Tuesday, 27 March 2018 10:10 (15 minutes)*

**Presenters:** SCHOVANCOVA, Jaroslava (CERN); MCCANCE, Gavin (CERN)

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: 64

Type: **not specified**

## **First steps on simulation readout vectorization: LArSoft**

*Wednesday, 28 March 2018 17:50 (10 minutes)*

**Presenter:** SNIDER, Erica (Fermilab)

**Session Classification:** Simulation

Contribution ID: 65

Type: **not specified**

## **CmsToyGV: Integration tests of GeantV in CMS software framework**

*Wednesday, 28 March 2018 16:20 (20 minutes)*

**Presenter:** PEDRO, Kevin (Fermi National Accelerator Lab. (US))

**Session Classification:** Simulation

Contribution ID: 66

Type: **not specified**

## **Programming languages for frameworks: is C++ still the best choice?**

*Wednesday, 28 March 2018 16:30 (30 minutes)*

**Presenter:** POPESCU, Radu (CERN)

**Session Classification:** Frameworks Technical Session

Contribution ID: 67

Type: **not specified**

## **Task Based Parallelism: TBB, HPX, Others?**

**Session Classification:** Frameworks Technical Session

Contribution ID: **68**

Type: **not specified**

## Overview of Serialization Technologies

*Wednesday, 28 March 2018 16:00 (30 minutes)*

**Presenter:** PIVARSKI, Jim (Princeton University)

**Session Classification:** Frameworks Technical Session

Contribution ID: **69**

Type: **not specified**

## **C++ Metaclasses for Framework Developers**

**Presenter:** CLEMENCIC, Marco (CERN)

**Session Classification:** Frameworks Technical Session

Contribution ID: 70

Type: **not specified**

## Overview of the Working Group, Mandate, Activities and Status

*Wednesday, 28 March 2018 11:00 (30 minutes)*

Mainly for non working group members. Intended to raise interest and stimulate contributions.

**Presenter:** FLIX MOLINA, Jose (Centro de Investigaciones Energéticas Medioambientales y Tecnológicas)

**Session Classification:** Performance and Cost Modeling Introduction

Contribution ID: 71

Type: **not specified**

## Importance of a common vocabulary

Short introduction of how we call things ( workloads, workflows etc.)

Table of workloads (steps and chains) and the transformations that they do

**Presenter:** ANDREA SCIABA OR DANIELE TBC

**Session Classification:** Performance and Cost Modeling Introduction

Contribution ID: 72

Type: **not specified**

## Most important workloads and how to run them

*Wednesday, 28 March 2018 11:30 (15 minutes)*

Reason why these workloads are “important” in matters of cost.

Focus on Run2 experience

Run3 and HL-LHC will be covered in the afternoon session

Summarise what we have, list of workloads

Overview of the experience gained running these workloads (especially from non experiment members view)

**Presenter:** ELMSHEUSER, Johannes (Brookhaven National Laboratory (US))

**Session Classification:** Performance and Cost Modeling Introduction

Contribution ID: 73

Type: **not specified**

## Metrics and Measurements

*Wednesday, 28 March 2018 11:45 (20 minutes)*

The metrics relevant for the workloads.

Status of the measurement of these quantities for the different workloads.

More detailed discussions either in the afternoon session or during dedicated meetings

**Presenter:** ROY, Gareth Douglas (University of Glasgow (GB))

**Session Classification:** Performance and Cost Modeling Introduction

Contribution ID: 74

Type: **not specified**

## Cost evaluation process

*Wednesday, 28 March 2018 12:05 (20 minutes)*

Mapping the cost model to site relevant costs  
Walk through an simple example, motivation etc.

Afternoon: Concrete example calculations, where to go from here, discussions

**Presenter:** BISCARAT, Catherine (LPSC Grenoble, IN2P3/CNRS)

**Session Classification:** Performance and Cost Modeling Introduction

Contribution ID: 75

Type: **not specified**

## **Common resource calculation model: Brainstorming/Hackathon**

*Wednesday, 28 March 2018 14:50 (30 minutes)*

How to estimate resource needs for run periods.

From several Excel sheets to a generic Python code with different configuration parameters by experiment.

Starting from a simplistic Python script (needs to be prepared)

Discussion and work on the code

**Presenter:** SARTIRANA, Andrea (Centre National de la Recherche Scientifique (FR))

**Session Classification:** Performance and Cost Modeling Introduction

Contribution ID: 76

Type: **not specified**

## **ALFA: Alice-Fair message queue based reconstruction and analysis framework**

*Tuesday, 27 March 2018 12:00 (30 minutes)*

**Presenter:** KOLLEGER, Thorsten (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE))

**Session Classification:** Frameworks and Infrastructure

Contribution ID: 77

Type: **not specified**

## CLARA: Clas12 Reconstruction and Analysis Framework

*Tuesday, 27 March 2018 11:30 (30 minutes)*

**Presenter:** GYURJYAN, Vardan (Jefferson Lab)

**Session Classification:** Frameworks and Infrastructure

Contribution ID: 78

Type: **not specified**

## Tools and Techniques for Performance/Cost Measurements

*Wednesday, 28 March 2018 13:30 (30 minutes)*

A presentation of tools and techniques needed to measure the performance metrics.  
15' presentation followed by 15' discussion

**Presenter:** VALASSI, Andrea (CERN)

**Session Classification:** Performance and Cost Modeling Introduction

Contribution ID: 79

Type: **not specified**

## Evolution of the critical workloads in Run3 and HL-LHC

*Wednesday, 28 March 2018 14:00 (30 minutes)*

Run3 and HL-LHC , What will change?

How can we “fake” in a more realistic way these conditions until we have the code that handles data for these periods?

Will there be an impact of the change of global architecture and what will it be, how can we quantify it?

Starting with a 3-4 slide introduction, then interactive work and discussion.

**Presenter:** LANGE, David (Princeton University (US))

**Session Classification:** Performance and Cost Modeling Introduction

Contribution ID: **80**

Type: **not specified**

## **Cost evaluation process, example calculation**

*Wednesday, 28 March 2018 14:30 (20 minutes)*

Walk through the example

Discussion on where to go from here

**Presenter:** VERNET, Renaud (Centre National de la Recherche Scientifique (FR))

**Session Classification:** Performance and Cost Modeling Introduction

Contribution ID: **81**

Type: **not specified**

## **Threads to grids: distributed concurrency in athena/Gaudi**

*Tuesday, 27 March 2018 11:00 (30 minutes)*

**Presenter:** Dr LEGGETT, Charles (Lawrence Berkeley National Lab (US))

**Session Classification:** Frameworks and Infrastructure

Contribution ID: **82**

Type: **not specified**

## Summary, Follow up

*Wednesday, 28 March 2018 15:20 (10 minutes)*

First attempt at giving a high-level summary of the technical session

**Presenter:** SCHULZ, Markus (CERN)

**Session Classification:** Performance and Cost Modeling Introduction

Contribution ID: **83**

Type: **not specified**

## Lightning Talk 1 (CMS/ATLAS)

*Tuesday, 27 March 2018 13:30 (10 minutes)*

**Presenter:** MALIK, Sudhir (University of Puerto Rico (PR))

**Session Classification:** Training and Careers

Contribution ID: **84**

Type: **not specified**

## Lightning Talk 4 (Starterkit - LHCb)

*Tuesday, 27 March 2018 14:00 (10 minutes)*

**Presenter:** BELLEE, Violaine (EPFL - Ecole Polytechnique Federale Lausanne (CH))

**Session Classification:** Training and Careers

Contribution ID: 85

Type: **not specified**

## Lightning Talk 5 (ALICE)

*Tuesday, 27 March 2018 14:10 (10 minutes)*

**Presenter:** BERZANO, Dario (CERN)

**Session Classification:** Training and Careers

Contribution ID: 86

Type: **not specified**

## **Lightning Talk 6 (Data Science @Università di Padova and INFN)**

*Tuesday, 27 March 2018 14:20 (10 minutes)*

**Presenter:** ZANETTI, Marco (Universita e INFN, Padova (IT))

**Session Classification:** Training and Careers

Contribution ID: 87

Type: **not specified**

## Lightning Talk 7 (Bertinoro School of Computing)

*Tuesday, 27 March 2018 14:30 (10 minutes)*

**Presenter:** GIACOMINI, Francesco (INFN CNAF)

**Session Classification:** Training and Careers

Contribution ID: **88**

Type: **not specified**

## **Lightning Talk 8 (Neutrino experiments @ FNAL)**

*Tuesday, 27 March 2018 14:40 (10 minutes)*

**Presenter:** KUTSCHKE, Robert (Femilab)

**Session Classification:** Training and Careers

Contribution ID: **89**

Type: **not specified**

## Lightning Talk 9 (VIRGO+LIGO)

*Tuesday, 27 March 2018 14:50 (10 minutes)*

**Presenter:** ASTONE, Pia (INFN - National Institute for Nuclear Physics)

**Session Classification:** Training and Careers

Contribution ID: 90

Type: **not specified**

## Lightning Talk 10 (Vision for Future Integrated Software Training)

*Tuesday, 27 March 2018 15:00 (10 minutes)*

**Presenter:** ELMER, Peter (Princeton University (US))

**Session Classification:** Training and Careers

Contribution ID: **91**

Type: **not specified**

## Round Table - Discussion

*Tuesday, 27 March 2018 15:10 (20 minutes)*

**Session Classification:** Training and Careers

Contribution ID: 92

Type: **not specified**

## Sponsor presentation: DELL

*Monday, 26 March 2018 15:10 (15 minutes)*

**Presenter:** HILGEMAN, Martin (Dell)

**Session Classification:** Technology Watch

Contribution ID: 93

Type: **not specified**

## Sponsor presentation: RITTAL

*Monday, 26 March 2018 15:25 (15 minutes)*

**Presenter:** RYLANDS, Jason (Rittal)

**Session Classification:** Technology Watch

Contribution ID: 94

Type: **not specified**

## **GÉANT Data Transfer Node service**

*Monday, 26 March 2018 14:10 (10 minutes)*

Design and users' recommendations

**Presenter:** Mr CAPONE, Vincenzo (GÉANT)

**Session Classification:** Technology Watch

Contribution ID: 95

Type: **not specified**

## CERN Analysis Preservation Portal

*Tuesday, 27 March 2018 13:50 (20 minutes)*

**Presenter:** DALLMEIER-TIESSEN, Sunje (CERN)

**Session Classification:** Data Preservation for HEP

Contribution ID: 96

Type: **not specified**

## Achilles'heels in LTDP or how do we address risks

*Tuesday, 27 March 2018 14:10 (20 minutes)*

**Presenter:** GANIS, Gerardo (CERN)

**Session Classification:** Data Preservation for HEP

Contribution ID: 97

Type: **not specified**

## Collaboration Across HEP and with Other Disciplines: An EIROForum Sub-Group

*Tuesday, 27 March 2018 14:30 (20 minutes)*

Two specific sub-topics:

- Offering LTDP Services to other HEP sites, e.g. “bit preservation” (and more?) for BaBar
- A nascent sub-group of the existing EIROForum IT Working Group

**Presenter:** SHIERS, Jamie (CERN)

**Session Classification:** Data Preservation for HEP

Contribution ID: 98

Type: **not specified**

## Archiving and Preservation "in the Cloud" - Outlook

*Tuesday, 27 March 2018 14:50 (20 minutes)*

**Presenter:** FERNANDES, João (CERN)

**Session Classification:** Data Preservation for HEP

Contribution ID: 99

Type: **not specified**

## **CWP Roadmap, Preparing Input to update of European Strategy for Particle Physics (and others elsewhere in the world)**

*Tuesday, 27 March 2018 15:10 (20 minutes)*

**Presenters:** HILDRETH, Mike (Department of Physics-College of Science-University of Notre Da); HILDRETH, Mike (University of Notre Dame (US))

**Session Classification:** Data Preservation for HEP

Contribution ID: **100**

Type: **not specified**

## **IHEP Experiments and Software Development**

*Monday, 26 March 2018 10:40 (15 minutes)*

**Presenter:** ZHANG, Xiaomei (Chinese Academy of Sciences (CN))

**Session Classification:** Opening Plenary Session

Contribution ID: **101**

Type: **not specified**

## Dynamo - Intelligent Data Management

*Tuesday, 27 March 2018 09:25 (15 minutes)*

**Presenters:** MAIER, Benedikt (KIT - Karlsruhe Institute of Technology (DE)); MAIER, Benedikt (K); MAIER, Benedikt (Massachusetts Inst. of Technology (US)); PAUS, Christoph (Massachusetts Inst. of Technology (US))

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: **102**

Type: **not specified**

## **Performance metrics and measurements in the Data Lake model**

**Presenters:** MCCANCE, Gavin (CERN); SCHOVANCOVA, Jaroslava (CERN)

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: **103**

Type: **not specified**

## **caching technologies: Xcache**

*Wednesday, 28 March 2018 17:30 (20 minutes)*

**Presenter:** YANG, Wei (SLAC National Accelerator Laboratory (US))

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: **104**

Type: **not specified**

## **XRoot and HTTP Third Party Copy**

*Wednesday, 28 March 2018 17:10 (20 minutes)*

**Presenter:** HANUSHEVSKY, Andrew Bohdan (SLAC National Accelerator Laboratory (US))

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: **105**

Type: **not specified**

## **wrap up**

*Tuesday, 27 March 2018 10:25 (5 minutes)*

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: **106**

Type: **not specified**

## Project Discussions: Packaging

*Wednesday, 28 March 2018 11:00 (30 minutes)*

- Packaging requirements: what are the contentious points and how do we go forward?
- How do we scale to multiple project which have completely different timescales and requirements in terms of software stacks?

**Presenter:** STEWART, Graeme (CERN)

**Session Classification:** Software Development

Contribution ID: **107**

Type: **not specified**

## Project Incubation

*Wednesday, 28 March 2018 12:00 (15 minutes)*

- Does the Incubator model of Apache make sense for HSF?
- As a project leaders what would make me move to HSF?
- As a HSF reviewers what are the minimum requirement for incubating a project?

**Presenter:** EULISSE, Giulio (CERN)

**Session Classification:** Software Development

Contribution ID: **108**

Type: **not specified**

## Becoming "Mainstream"

*Wednesday, 28 March 2018 12:15 (15 minutes)*

- What are the OpenSource conferences / workshops we should try to have a more "active" presence?
- How can we get support from experiments, projects, home institutions to have people attend OpenSource events and be part of the OpenSource community?

**Presenter:** RODRIGUES, Eduardo (University of Cincinnati (US))

**Session Classification:** Software Development

Contribution ID: **109**

Type: **not specified**

## Project Discussions: Profilers

*Wednesday, 28 March 2018 11:30 (15 minutes)*

- What are the available/used tools?
- What are their shortcomings?
- Possible solutions to these shortcomings

**Presenter:** COUTURIER, Ben (CERN)

**Session Classification:** Software Development

Contribution ID: 111

Type: **not specified**

## Project Discussions: Static Analyzers

*Wednesday, 28 March 2018 11:45 (15 minutes)*

- What are the available/used tools?
- What are their shortcomings?
- Possible solutions to these shortcomings

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

**Session Classification:** Software Development

Contribution ID: **112**

Type: **not specified**

## **Geant4 R&D programme**

*Wednesday, 28 March 2018 14:30 (20 minutes)*

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

**Session Classification:** Simulation

Contribution ID: **113**

Type: **not specified**

## **ALICE - Preparation for Run3**

*Wednesday, 28 March 2018 13:50 (20 minutes)*

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

**Session Classification:** Simulation

Contribution ID: **114**

Type: **not specified**

## **LHCb - Preparation for Run3**

*Wednesday, 28 March 2018 13:30 (20 minutes)*

**Presenter:** CORTI, Gloria (CERN)

**Session Classification:** Simulation

Contribution ID: **115**

Type: **not specified**

## **Reconstruction challenges for HL-LHC**

*Monday, 26 March 2018 17:15 (20 minutes)*

**Presenter:** INNOCENTE, Vincenzo (CERN)

**Session Classification:** HEP Use Cases

Contribution ID: **116**

Type: **not specified**

# **Simulation and event reconstruction challenges for DUNE**

*Monday, 26 March 2018 16:50 (20 minutes)*

**Presenter:** SNIDER, Erica (Fermilab)

**Session Classification:** HEP Use Cases

Contribution ID: **117**

Type: **not specified**

## Parallelized tracking algorithms

*Wednesday, 28 March 2018 10:00 (20 minutes)*

**Presenter:** KORTELAJINEN, Matti (Fermi National Accelerator Lab. (US))

**Session Classification:** Programming for Concurrency and Co-Processors

Contribution ID: **118**

Type: **not specified**

## **Variance reduction techniques in HEP for Geant4**

*Wednesday, 28 March 2018 16:50 (20 minutes)*

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

**Session Classification:** Simulation

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

## VR-based event visualization in Belle II

*Wednesday, 28 March 2018 12:00 (15 minutes)*

Development and deployment of a new virtual-reality educational tool for physics students (and for public outreach) in which the user experiences and interacts with the animated timeline of GEANT4-generated electron-positron collision events in the Belle II apparatus at the KEK laboratory in Japan. Lessons learned during the project and future plans.

**Presenter:** PIILONEN, Leo (Virginia Tech)**Session Classification:** Visualisation

Contribution ID: **120**

Type: **not specified**

## **Distributed Storage and Data Lakes: The XDC Project**

*Wednesday, 28 March 2018 16:40 (5 minutes)*

**Presenter:** KEEBLE, Oliver (CERN)

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: **121**

Type: **not specified**

## Discussion

*Wednesday, 28 March 2018 10:20 (10 minutes)*

**Session Classification:** Programming for Concurrency and Co-Processors

Contribution ID: **122**

Type: **not specified**

## Discussion on Frameworks Section of CWP

*Wednesday, 28 March 2018 17:00 (30 minutes)*

**Presenter:** SEXTON-KENNEDY, Elizabeth (Fermi National Accelerator Lab. (US))

**Session Classification:** Frameworks Technical Session

Contribution ID: **123**

Type: **not specified**

## Challenges for LHCb trigger

*Monday, 26 March 2018 16:25 (20 minutes)*

**Presenter:** BOZZI, Concezio (CERN and INFN Ferrara)

**Session Classification:** HEP Use Cases

Contribution ID: **124**

Type: **not specified**

## Introduction

*Monday, 26 March 2018 16:10 (10 minutes)*

**Session Classification:** HEP Use Cases

Contribution ID: **125**

Type: **not specified**

## SKA contribution

*Thursday, 29 March 2018 09:00 (30 minutes)*

**Presenter:** SCAIFE, Anna (Manchester University)

**Session Classification:** Closing Plenary Session

Contribution ID: **126**

Type: **not specified**

## **Summary of Common Data Management and Data Lakes**

*Thursday, 29 March 2018 09:30 (10 minutes)*

**Presenter:** CAMPANA, Simone (CERN)

**Session Classification:** Closing Plenary Session

Contribution ID: **127**

Type: **not specified**

## Summary of Frameworks and Infrastructure

*Thursday, 29 March 2018 09:40 (10 minutes)*

**Presenter:** CLEMENCIC, Marco (CERN)

**Session Classification:** Closing Plenary Session

Contribution ID: **128**

Type: **not specified**

## **Summary of Programming for Concurrency and Co-Processors**

*Thursday, 29 March 2018 09:50 (10 minutes)*

**Presenter:** PIVARSKI, Jim (Princeton University)

**Session Classification:** Closing Plenary Session

Contribution ID: **129**

Type: **not specified**

## Summary of Simulation

*Thursday, 29 March 2018 10:00 (10 minutes)*

**Presenter:** ELVIRA, Victor Daniel (Fermi National Accelerator Lab. (US))

**Session Classification:** Closing Plenary Session

Contribution ID: **130**

Type: **not specified**

## Summary of Analysis Facilities and Use Cases

*Thursday, 29 March 2018 10:10 (10 minutes)*

**Presenter:** RODRIGUES, Eduardo (University of Cincinnati (US))

**Session Classification:** Closing Plenary Session

Contribution ID: **131**

Type: **not specified**

## Summary of Software Development

*Thursday, 29 March 2018 10:20 (10 minutes)*

**Presenter:** RITTER, Martin (LMU / Cluster Universe)

**Session Classification:** Closing Plenary Session

Contribution ID: **132**

Type: **not specified**

## Summary of Visualization

*Thursday, 29 March 2018 11:00 (10 minutes)*

**Presenter:** BIANCHI, Riccardo Maria (University of Pittsburgh (US))

**Session Classification:** Closing Plenary Session

Contribution ID: 133

Type: **not specified**

## Summary of Workload Management

*Thursday, 29 March 2018 11:10 (10 minutes)*

**Presenter:** WENAUS, Torre (Brookhaven National Laboratory (US))

**Session Classification:** Closing Plenary Session

Contribution ID: **134**

Type: **not specified**

## Summary of Security

*Thursday, 29 March 2018 11:20 (10 minutes)*

**Presenter:** CROOKS, David (University of Glasgow (GB))

**Session Classification:** Closing Plenary Session

Contribution ID: 135

Type: **not specified**

## Summary of Performance and Cost Modeling

*Thursday, 29 March 2018 11:30 (10 minutes)*

**Presenter:** SCHULZ, Markus (CERN)

**Session Classification:** Closing Plenary Session

Contribution ID: **136**

Type: **not specified**

## Summary of Data Preservation for HEP

*Thursday, 29 March 2018 11:40 (10 minutes)*

**Presenters:** Dr BECKER, Bruce (EGI Foundation); BECKER, Bruce (DAPNIA)

**Session Classification:** Closing Plenary Session

Contribution ID: 137

Type: **not specified**

## Summary of Training and Careers

*Thursday, 29 March 2018 11:50 (10 minutes)*

**Presenter:** MALIK, Sudhir (University of Puerto Rico (PR))

**Session Classification:** Closing Plenary Session

Contribution ID: **138**

Type: **not specified**

## Conclusions and way forward

*Thursday, 29 March 2018 12:00 (30 minutes)*

**Presenters:** STEWART, Graeme (CERN); BIRD, Ian (CERN)

**Session Classification:** Closing Plenary Session

Contribution ID: **139**

Type: **not specified**

## **Roadmap towards WM standardization for HL-LHC: Dirac perspective**

*Tuesday, 27 March 2018 14:50 (20 minutes)*

**Presenter:** STAGNI, Federico (CERN)

**Session Classification:** Workload Management

Contribution ID: **140**

Type: **not specified**

## **Challenges and evolution in event generators**

*Monday, 26 March 2018 17:40 (20 minutes)*

**Presenter:** CHILDERS, Taylor (Argonne National Laboratory (US))

**Session Classification:** HEP Use Cases

Contribution ID: **141**

Type: **not specified**

## **Roadmap towards WM standardization for HL-LHC: OSG perspective**

*Tuesday, 27 March 2018 15:10 (20 minutes)*

**Presenter:** BOCKELMAN, Brian Paul (University of Nebraska Lincoln (US))

**Session Classification:** Workload Management

Contribution ID: **142**

Type: **not specified**

## **Lightning Talk 3 (The CERN School of Computing)**

*Tuesday, 27 March 2018 13:50 (10 minutes)*

**Presenter:** LOPIENSKI, Sebastian (CERN)

**Session Classification:** Training and Careers

Contribution ID: 143

Type: **not specified**

## Open discussion: "Can we build common Viz Tools?" - Next steps

*Wednesday, 28 March 2018 12:15 (15 minutes)*

Open discussion on ideas for next steps towards possible joint projects and collaborations between HEP experiments.

Preparation for the Phase-2 of the CWP process: "After the CWP".

**Presenters:** BIANCHI, Riccardo Maria (University of Pittsburgh (US)); MC CAULEY, Thomas (University of Notre Dame (US))

**Session Classification:** Visualisation

Contribution ID: **144**

Type: **not specified**

## The ESCAPE project

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: **145**

Type: **not specified**

## The ESCAPE project

*Wednesday, 28 March 2018 16:45 (5 minutes)*

**Presenter:** BIRD, Ian (CERN)

**Session Classification:** Common Data Management and Data Lakes

Contribution ID: **146**

Type: **not specified**

## Open Discussion

*Wednesday, 28 March 2018 17:30 (30 minutes)*

**Session Classification:** Frameworks Technical Session