

# **Radiation effects at the LHC experiments and impact on operation and performance**

## **Report of Contributions**

Contribution ID: **1**

Type: **not specified**

## Registration

*Monday 23 April 2018 08:30 (30 minutes)*

Contribution ID: 2

Type: **not specified**

## Workshop welcome & goals

*Monday 23 April 2018 09:00 (10 minutes)*

**Presenter:** DAWSON, Ian (University of Sheffield (GB))

Contribution ID: 3

Type: **not specified**

## Introduction

*Tuesday 24 April 2018 09:00 (10 minutes)*

**Presenters:** MALLOWS, Sophie (KIT - Karlsruhe Institute of Technology (DE)); DAWSON, Ian (University of Sheffield (GB)); MUCHA, Agnieszka (UST, FPACS, CERN)

**Session Classification:** Radiation Background Simulation and Monitoring

Contribution ID: 4

Type: **not specified**

## ATLAS simulation overview

*Tuesday 24 April 2018 09:10 (25 minutes)*

20 min talk + 5 min discussion

**Presenter:** MIYAGAWA, Paul (University of Sheffield (GB))

**Session Classification:** Radiation Background Simulation and Monitoring

Contribution ID: 5

Type: **not specified**

## CMS simulation overview

*Tuesday 24 April 2018 09:35 (25 minutes)*

20 min talk + 5 min discussion

**Presenter:** MALLOWS, Sophie (KIT - Karlsruhe Institute of Technology (DE))

**Session Classification:** Radiation Background Simulation and Monitoring

Contribution ID: 6

Type: **not specified**

## LHCb simulation overview

*Tuesday 24 April 2018 10:00 (25 minutes)*

20 min talk + 5 min discussion

**Presenter:** SZUMLAK, Tomasz (AGH University of Science and Technology (PL))

**Session Classification:** Radiation Background Simulation and Monitoring

Contribution ID: 7

Type: **not specified**

## Recent developments FLUKA & DPMJET

15 min talk + 5 min discussion

**Presenter:** TBC

**Session Classification:** Radiation Background Simulation and Monitoring



Contribution ID: 8

Type: **not specified**

## **ATLAS radiation background studies using GEANT4 & GRID**

*Tuesday 24 April 2018 10:55 (20 minutes)*

15 min talk + 5 min discussion

**Presenter:** MENKE, Sven (Max-Planck-Institut fur Physik (DE))

**Session Classification:** Radiation Background Simulation and Monitoring

Contribution ID: 9

Type: **not specified**

## **CMS benchmarking of the radiation fields**

*Tuesday 24 April 2018 11:15 (15 minutes)*

12 min talk + 3 min discussion

**Presenter:** AZHGIREY, Igor (Institute for High Energy Physics (RU))

**Session Classification:** Radiation Background Simulation and Monitoring

Contribution ID: **10**

Type: **not specified**

## **Inner detector radiation field measurements with RadMons**

*Tuesday 24 April 2018 11:45 (15 minutes)*

12 min talk + 3 min discussion

**Presenter:** MANDIC, Igor (Jozef Stefan Institute (SI))

**Session Classification:** Radiation Background Simulation and Monitoring

Contribution ID: **11**

Type: **not specified**

## **LHCb benchmarking of the radiation fields**

*Tuesday 24 April 2018 11:30 (15 minutes)*

12 min talk + 3 min discussion

**Presenter:** KARACSON, Matthias (CERN)

**Session Classification:** Radiation Background Simulation and Monitoring

Contribution ID: 12

Type: **not specified**

## **Discussion on simulation uncertainties and safety factors**

*Tuesday 24 April 2018 12:15 (15 minutes)*

**Presenter:** DAWSON, Ian (University of Sheffield (GB))

**Session Classification:** Radiation Background Simulation and Monitoring

Contribution ID: 13

Type: **not specified**

## **ATLAS pixel and strip radiation damage measurements**

**Session Classification:** Sensor Measurements

Contribution ID: 14

Type: **not specified**

## **CMS Pixel and Strip radiation damage measurements (20'+10')**

*Monday 23 April 2018 10:05 (30 minutes)*

**Presenters:** HUNT, Julia Alexandra (KIT - Karlsruhe Institute of Technology (DE)); HUNT, Julia Alexandra (KIT - Karlsruhe Institute of Technology (DE))

**Session Classification:** Sensor Measurements

Contribution ID: 15

Type: **not specified**

## **LHCb radiation damage measurements**

**Session Classification:** Sensor Measurements



Contribution ID: **16**

Type: **not specified**

## **Measurement of composition of radiation fields in the ATLAS experiment with MPX/TPX**

*Tuesday 24 April 2018 12:00 (15 minutes)*

12 min talk + 3 min discussion

**Presenter:** POSPISIL, Stanislav (Institute of Experimental and Applied Physics, Czech Technical University in Prague)

**Session Classification:** Radiation Background Simulation and Monitoring

Contribution ID: 17

Type: **not specified**

## Introduction

**Session Classification:** Sensor Measurements

Contribution ID: **18**

Type: **not specified**

## Introduction

*Monday 23 April 2018 14:00 (10 minutes)*

**Presenters:** ROZANOV, Alexandre (CPPM, Aix-Marseille Université, CNRS/IN2P3 (FR)); BUTZ, Erik (KIT - Karlsruhe Institute of Technology (DE)); DAWSON, Ian (University of Sheffield (GB))

**Session Classification:** Electronics/Optoelectronics

Contribution ID: **19**

Type: **not specified**

## **TID effects at 130nm pixel electronics at low dose in ATLAS**

*Monday 23 April 2018 14:10 (20 minutes)*

15 min talk + 5 min discussion

**Presenter:** BACKHAUS, Malte (ETH Zurich (CH))

**Session Classification:** Electronics/Optoelectronics

Contribution ID: **20**

Type: **not specified**

## **SEU effects in the ATLAS pixel electronics**

*Monday 23 April 2018 14:30 (20 minutes)*

15 min talk + 5 min discussion

**Presenter:** BUTTI, Pierfrancesco (CERN)

**Session Classification:** Electronics/Optoelectronics

Contribution ID: **21**

Type: **not specified**

## **Irradiation effects in the ATLAS optoelectronics**

*Monday 23 April 2018 14:50 (20 minutes)*

15 min talk + 5 min discussion

**Presenter:** WEIDBERG, Anthony (University of Oxford (GB))

**Session Classification:** Electronics/Optoelectronics

Contribution ID: 22

Type: **not specified**

## SEU in the ATLAS strip detector (SCT)

*Monday 23 April 2018 15:10 (20 minutes)*

15 min talk + 5 min discussion

**Presenter:** ROBINSON, Dave (University of Cambridge (GB))

**Session Classification:** Electronics/Optoelectronics

Contribution ID: 23

Type: **not specified**

## **Irradiation aging of the electronics of the ATLAS Transition Radiation Tracker (TRT)**

*Monday 23 April 2018 15:30 (20 minutes)*

15 min talk + 5 min discussion

**Presenter:** HANEY, Bijan (University of Pennsylvania (US))

**Session Classification:** Electronics/Optoelectronics



Contribution ID: 24

Type: **not specified**

## **Strip electronics and optoelectronics irradiation effects at CMS**

*Monday 23 April 2018 16:20 (20 minutes)*

15 min talk + 5 min discussion

**Presenter:** TROSKA, Jan (CERN)

**Session Classification:** Electronics/Optoelectronics

Contribution ID: 25

Type: **not specified**

## SEU in CMS pixels

*Monday 23 April 2018 16:40 (20 minutes)*

15 min talk + 5 min discussion

**Presenter:** ERDMANN, Wolfram (Paul Scherrer Institut (CH))

**Session Classification:** Electronics/Optoelectronics

Contribution ID: 26

Type: **not specified**

## **Comparison of SEU expectations and observation in VELO tracker and TSMC latch-ups in the new pixels in LHCb**

15 min talk + 5 min discussion

**Presenter:** SPEAKER TBC

**Session Classification:** Electronics/Optoelectronics

Contribution ID: 27

Type: **not specified**

## **Irradiation effects in ALICE electronics**

*Monday 23 April 2018 17:00 (20 minutes)*

15 min talk + 5 min discussion

**Presenter:** HILLEMANN, Hartmut (CERN)

**Session Classification:** Electronics/Optoelectronics

Contribution ID: **28**

Type: **not specified**

## Discussion session

*Monday 23 April 2018 17:20 (30 minutes)*

**Session Classification:** Electronics/Optoelectronics

Contribution ID: 29

Type: **not specified**

## CMS Sensor Simulations

**Session Classification:** Sensor Simulation

Contribution ID: **30**

Type: **not specified**

## **CMS Sensor Simulation**

**Session Classification:** Sensor Simulation

Contribution ID: **31**

Type: **not specified**

## **ATLAS Sensor Simulation**

**Presenter:** BOMBEN, Marco (LPNHE & Université Paris Diderot, Paris (FR))

**Session Classification:** Sensor Simulation



Contribution ID: **32**

Type: **not specified**

## Introduction

*Tuesday 24 April 2018 14:00 (10 minutes)*

**Presenter:** BOMBEN, Marco (LPNHE & Université Paris Diderot, Paris (FR))

**Session Classification:** Sensor Simulation

Contribution ID: 33

Type: **not specified**

## Pixel Leakage Current Measurements from ATLAS (20'+5')

*Monday 23 April 2018 09:15 (25 minutes)*

**Presenter:** GRUMMER, Aidan (University of New Mexico (US))

**Session Classification:** Sensor Measurements

Contribution ID: 34

Type: **not specified**

## **Pixel Depletion Voltage Measurements from ATLAS (15'+5')**

*Monday 23 April 2018 11:00 (20 minutes)*

**Presenter:** BEYER, Julien-Christopher (Max-Planck-Institut fur Physik (DE))

**Session Classification:** Sensor Measurements

Contribution ID: 35

Type: **not specified**

## **Leakage Current Measurements from LHCb (20'+5')**

*Monday 23 April 2018 09:40 (25 minutes)*

**Presenter:** FRANCO LIMA, Vinicius (University of Liverpool (GB))

**Session Classification:** Sensor Measurements

Contribution ID: 36

Type: **not specified**

## Depletion Voltage Measurements from LHCb (20'+5')

*Monday 23 April 2018 11:20 (25 minutes)*

**Presenter:** BARTER, William James (University of Manchester (GB))

**Session Classification:** Sensor Measurements

Contribution ID: 37

Type: **not specified**

## Latest News from RD50 (15'+5')

*Monday 23 April 2018 12:10 (20 minutes)*

**Presenter:** CENTIS VIGNALI, Matteo (CERN)

**Session Classification:** Sensor Measurements

Contribution ID: **38**

Type: **not specified**

## **Cluster and Track Property Data/MC in ATLAS (20'+5')**

*Tuesday 24 April 2018 15:50 (25 minutes)*

**Presenter:** ROSSINI, Lorenzo (Università degli Studi e INFN Milano (IT))

**Session Classification:** Sensor Simulation

Contribution ID: 39

Type: **not specified**

## **Silicon Sensor Simulation in the ATLAS Monte Carlo Framework (20'+10')**

*Tuesday 24 April 2018 14:10 (30 minutes)*

**Presenter:** NACHMAN, Ben (University of California Berkeley (US))

**Session Classification:** Sensor Simulation



Contribution ID: 40

Type: **not specified**

## **Silicon Sensor Simulation in the LHCb Monte Carlo Framework (15'+5')**

*Tuesday 24 April 2018 14:40 (20 minutes)*

**Presenter:** SZUMLAK, Tomasz (AGH University of Science and Technology (PL))

**Session Classification:** Sensor Simulation

Contribution ID: 41

Type: **not specified**

## **Silicon Sensor Simulation in the CMS Monte Carlo Framework (15'+5')**

*Tuesday 24 April 2018 15:00 (20 minutes)*

**Presenters:** SWARTZ, Morris (Johns Hopkins University (US)); SWARTZ, Morris (Johns Hopkins University (JHU))

**Session Classification:** Sensor Simulation

Contribution ID: 42

Type: **not specified**

## Discussion and Closeout

*Tuesday 24 April 2018 16:15 (1 hour)*

**Session Classification:** Sensor Simulation

Contribution ID: 43

Type: **not specified**

## Measurements with the ATLAS strip detector (20'+5')

*Monday 23 April 2018 11:45 (25 minutes)*

**Presenter:** KONDO, Taka (High Energy Accelerator Res. Organ. (KEK))

**Session Classification:** Sensor Measurements

Contribution ID: 44

Type: **not specified**

## Session introduction

*Monday 23 April 2018 09:10 (5 minutes)*

**Presenter:** MOLL, Michael (CERN)

**Session Classification:** Sensor Measurements