

# **ACTS Developers Workshop**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

## Introduction & Welcome

*Monday 26 September 2022 10:00 (10 minutes)*

**Presenter:** SALZBURGER, Andreas (CERN)

**Session Classification:** General

Contribution ID: 2

Type: **not specified**

## Project overview and status

*Monday 26 September 2022 10:15 (30 minutes)*

**Presenter:** SALZBURGER, Andreas (CERN)

**Session Classification:** General

Contribution ID: 3

Type: **not specified**

## Status Overview ACTS R&D Lines

**Session Classification:** General

Contribution ID: 4

Type: **not specified**

## Geometry & Event Data Model

*Monday 26 September 2022 13:30 (15 minutes)*

**Presenter:** SALZBURGER, Andreas (CERN)

**Session Classification:** General

Contribution ID: 5

Type: **not specified**

## Propagation

*Monday 26 September 2022 13:45 (15 minutes)*

**Presenter:** SALZBURGER, Andreas (CERN)

**Session Classification:** General

Contribution ID: 6

Type: **not specified**

## Seeding & Pattern

*Monday 26 September 2022 14:00 (30 minutes)*

**Presenters:** FALDA COELHO, Luis (CERN); Mr SWATMAN, Stephen Nicholas (University of Amsterdam (NL))

**Session Classification:** General

Contribution ID: 7

Type: **not specified**

## Fitting

*Monday 26 September 2022 14:30 (30 minutes)*

**Presenters:** PFLEGER, Alexander J (University of Graz (AT)); HUTH, Benjamin; AI, Xiaocong (DESY)

**Session Classification:** General



Contribution ID: 8

Type: **not specified**

## Vertexing

*Monday 26 September 2022 15:00 (20 minutes)*

**Presenter:** GARG, Rocky Bala (Stanford University (US))

**Session Classification:** General

Contribution ID: 9

Type: **not specified**

## **ATLAS**

*Monday 26 September 2022 16:00 (15 minutes)*

**Presenter:** STYLES, Nicholas (Deutsches Elektronen-Synchrotron (DE))

**Session Classification:** General

Contribution ID: **10**

Type: **not specified**

## **sPHENIX**

*Monday 26 September 2022 16:20 (15 minutes)*

**Presenter:** FRAWLEY, Anthony (Florida State University)

**Session Classification:** General

Contribution ID: 11

Type: **not specified**

## **BGV**

*Monday 26 September 2022 17:00 (15 minutes)*

**Presenter:** KOLBINGER, Bernadette (CERN)

**Session Classification:** General

Contribution ID: 12

Type: **not specified**

## FASER

*Monday 26 September 2022 17:20 (15 minutes)*

**Presenter:** LI, Ke (University of Washington (US))

**Session Classification:** General

Contribution ID: 13

Type: **not specified**

## ALICE O3

*Monday 26 September 2022 16:40 (15 minutes)*

**Presenter:** LARIONOV, Pavel (CERN)

**Session Classification:** General

Contribution ID: 14

Type: **not specified**

## LDMX

*Monday 26 September 2022 17:40 (10 minutes)*

**Presenter:** BUTTI, Pierfrancesco (SLAC National Accelerator Laboratory (US))

**Session Classification:** General

Contribution ID: 15

Type: **not specified**

## EPIC (EIC)

*Monday 26 September 2022 17:55 (15 minutes)*

**Presenter:** LI, Shujie (Berkeley Lab)

**Session Classification:** General



Contribution ID: 16

Type: **not specified**

## Status Overview Build & Infrastructure

*Monday 26 September 2022 10:50 (20 minutes)*

**Presenter:** GESSINGER, Paul (CERN)

**Session Classification:** General

Contribution ID: 17

Type: **not specified**

## **Geometry: Proposal for geometry without layers**

*Tuesday 27 September 2022 09:30 (20 minutes)*

**Presenter:** SALZBURGER, Andreas (CERN)

**Session Classification:** General

Contribution ID: 18

Type: **not specified**

## Event Data Model: Upcoming developments

*Tuesday 27 September 2022 10:00 (20 minutes)*

**Presenter:** GESSINGER, Paul (CERN)

**Session Classification:** General

Contribution ID: 19

Type: **not specified**

## **Build resources common pitfalls**

*Tuesday 27 September 2022 11:00 (20 minutes)*

**Presenters:** GRASLAND, Hadrien Benjamin (Université Paris-Saclay (FR)); GRASLAND, Hadrien (IJCLab)

**Session Classification:** General

Contribution ID: 20

Type: **not specified**

## Discussion: Alignment

*Tuesday 27 September 2022 11:25 (20 minutes)*

**Presenter:** AI, Xiaocong (DESY)

**Session Classification:** General

Contribution ID: 21

Type: **not specified**

## **Discussion: Drift Chambers and non-planar detectors**

*Tuesday 27 September 2022 11:50 (20 minutes)*

**Presenters:** SALZBURGER, Andreas (CERN); AI, Xiaocong (DESY)

**Session Classification:** General

Contribution ID: 22

Type: **not specified**

## **Discussion: tracc -> Acts(Core)**

*Tuesday 27 September 2022 17:20 (20 minutes)*

A discussion on how the tracc algorithms would be transplanted into Acts(Core/Plugin) tools/components at the conclusion of the R&D effort.

**Session Classification:** R&D Lines

Contribution ID: 23

Type: **not specified**

## Status & Plans: algebra-plugins, detr~~ay~~

*Tuesday 27 September 2022 15:30 (20 minutes)*

An overview of the current status of the algebra-plugins and detr~~ay~~ projects, and the remaining developments going on with them.

**Presenters:** YEO, Beomki (Lawrence Berkeley National Lab. (US)); NIERMANN, Joana (Georg August Universitaet Goettingen (DE))

**Session Classification:** R&D Lines



Contribution ID: 24

Type: **not specified**

## Status & Plans: tracc

*Tuesday 27 September 2022 16:20 (20 minutes)*

An overview of the tracc project, showing its current status and the remaining plans with it.

**Presenter:** METELO RITA DE ALMEIDA, Guilherme (Universidade de Lisboa (PT))

**Session Classification:** R&D Lines

Contribution ID: 25

Type: **not specified**

## Discussion: (Event) Data Model

*Tuesday 27 September 2022 16:50 (20 minutes)*

A discussion about the data model used in the R&D projects, and how it would be translated into the Acts project.

**Session Classification:** R&D Lines

Contribution ID: 26

Type: **not specified**

## Status & Plans: covfie

*Tuesday 27 September 2022 15:55 (10 minutes)*

A description of the library providing generic vector field descriptions for the R&D project.

**Presenter:** Mr SWATMAN, Stephen Nicholas (University of Amsterdam (NL))

**Session Classification:** R&D Lines

Contribution ID: 27

Type: **not specified**

## **Auto-tuning in acts for seeding and vertexing**

*Tuesday 27 September 2022 13:30 (20 minutes)*

**Presenter:** GARG, Rocky Bala (Stanford University (US))

**Session Classification:** R&D Lines

Contribution ID: 28

Type: **not specified**

## **Auto-tuning of the Acts material mapping with Orion**

*Tuesday 27 September 2022 13:55 (20 minutes)*

**Presenter:** ALLAIRE, Corentin (Université Paris-Saclay (FR))

**Session Classification:** R&D Lines

Contribution ID: 29

Type: **not specified**

## Tracking with Hashing in ACTS

*Tuesday 27 September 2022 14:20 (20 minutes)*

**Presenter:** COUTHURES, Jeremy (Centre National de la Recherche Scientifique (FR))

**Session Classification:** R&D Lines

Contribution ID: **30**

Type: **not specified**

## **Exatrnx-ACTS integration & GNN applications**

*Tuesday 27 September 2022 14:45 (10 minutes)*

**Presenter:** JU, Xiangyang (Lawrence Berkeley National Lab. (US))

**Session Classification:** R&D Lines

Contribution ID: 31

Type: **not specified**

## Using Optuna and Orion to tune seeding parameters

*Wednesday 28 September 2022 13:30 (30 minutes)*

**Presenter:** GARG, Rocky Bala (Stanford University (US))

**Session Classification:** Tutorials



Contribution ID: 32

Type: **not specified**

## Using Orion to tune the material mapping

*Wednesday 28 September 2022 14:00 (30 minutes)*

**Presenter:** ALLAIRE, Corentin (Université Paris-Saclay (FR))

**Session Classification:** Tutorials

Contribution ID: 33

Type: **not specified**

## Using the Exa.TrkX GNN in Acts

*Wednesday 28 September 2022 14:30 (30 minutes)*

**Presenter:** HUTH, Benjamin

**Session Classification:** Tutorials

Contribution ID: 34

Type: **not specified**

## **Fatras (cancelled)**

*Monday 26 September 2022 15:20 (10 minutes)*

**Presenter:** SALZBURGER, Andreas (CERN)

**Session Classification:** General

Contribution ID: 35

Type: **not specified**

## **Getting started with ACTS + ACTS demonstrator**

*Wednesday 28 September 2022 09:30 (20 minutes)*

**Session Classification:** Tutorials

Contribution ID: **36**

Type: **not specified**

## **My own ACTS algorithm**

**Session Classification:** Tutorials

Contribution ID: 37

Type: **not specified**

## **My own ACTS detector**

**Session Classification:** Tutorials

Contribution ID: 38

Type: **not specified**

## Writing an algorithm

*Wednesday 28 September 2022 09:50 (20 minutes)*

Tutorial how to write an algorithm and use it within the Example framework in a meaningful manner.

**Presenter:** SALZBURGER, Andreas (CERN)

**Session Classification:** Tutorials

Contribution ID: 39

Type: **not specified**

## Full Chain Tutorial

*Wednesday 28 September 2022 11:00 (30 minutes)*

**Presenter:** STEFL, Andreas (Technische Universitaet Wien (AT))

**Session Classification:** Tutorials



Contribution ID: 40

Type: **not specified**

## Overflow item: Fatras

*Wednesday 28 September 2022 11:30 (20 minutes)*

**Presenter:** SALZBURGER, Andreas (CERN)

**Session Classification:** Tutorials