

Analysis Ecosystem Workshop II

Report of Contributions

Contribution ID: 1

Type: **not specified**

Welcome

Monday 23 May 2022 09:00 (15 minutes)

Presenters: JOUVIN, Michel (Université Paris-Saclay (FR)); CHAMBERT, Valerie (Universite de Paris-Sud 11 (FR)); CHAMBERT, Valérie (IPN Orsay/IN2P3/CNRS)

Session Classification: Plenary

Contribution ID: 2

Type: **not specified**

Introduction to the Workshop

Monday 23 May 2022 09:15 (30 minutes)

Presenter: Dr STEWART, Graeme A (CERN)

Session Classification: Plenary

Contribution ID: 3

Type: **not specified**

New Advances in Analysis Facilities

Monday 23 May 2022 09:45 (15 minutes)

Presenter: GARDNER, Robert (University of Chicago)

Session Classification: Plenary

Contribution ID: 4

Type: **not specified**

Analysis frameworks and Analysis Facilities: user experience

Monday 23 May 2022 10:00 (15 minutes)

Presenter: SMITH, Nick (Fermi National Accelerator Lab. (US))

Session Classification: Plenary

Contribution ID: 5

Type: **not specified**

Impact on Analysis Facilities in the context of DOMA evolution

Monday 23 May 2022 10:15 (15 minutes)

Presenter: FORTI, Alessandra (University of Manchester (GB))

Session Classification: Plenary

Contribution ID: 6

Type: **not specified**

Data Analysis Metadata Review

Monday 23 May 2022 11:00 (20 minutes)

Presenter: KUHR, Thomas (Ludwig Maximilians Universitat (DE))

Session Classification: Plenary

Contribution ID: 7

Type: **not specified**

Big Questions in Systematics Processing

Monday 23 May 2022 11:20 (20 minutes)

Presenter: HAGEBOECK, Stephan (CERN)

Session Classification: Plenary

Contribution ID: 8

Type: **not specified**

ML Tooling and Use Landscape in HEP

Monday 23 May 2022 11:40 (20 minutes)

Presenter: GASIOROWSKI, Sean Joseph (SLAC National Accelerator Laboratory (US))

Session Classification: Plenary

Contribution ID: 9

Type: **not specified**

Differentiable Programming in HEP

Monday 23 May 2022 12:00 (20 minutes)

Presenter: HEINRICH, Lukas Alexander (CERN)

Session Classification: Plenary

Contribution ID: **10**

Type: **not specified**

Extra Discussion

Monday 23 May 2022 12:20 (10 minutes)

Session Classification: Plenary

Contribution ID: 11

Type: **not specified**

ROOT User Workshop Summary

Monday 23 May 2022 17:00 (20 minutes)

Presenter: NAUMANN, Axel (CERN)

Session Classification: Plenary

Contribution ID: 12

Type: **not specified**

Analysis user experience with the Python HEP ecosystem

Monday 23 May 2022 17:20 (20 minutes)

Authors: PIVARSKI, Jim (Princeton University); FEICKERT, Matthew (Univ. Illinois at Urbana Champaign (US))

Presenters: PIVARSKI, Jim (Princeton University); FEICKERT, Matthew (Univ. Illinois at Urbana Champaign (US))

Session Classification: Plenary

Contribution ID: 13

Type: **not specified**

Declarative Languages Overview

Monday 23 May 2022 17:40 (20 minutes)

Presenter: SEKMEN, Sezen (Kyungpook National University (KR))

Session Classification: Plenary

Contribution ID: **14**

Type: **not specified**

Reduced Formats in CMS

Tuesday 24 May 2022 09:20 (15 minutes)

Presenter: GRAY, Lindsey (Fermi National Accelerator Lab. (US))

Session Classification: Plenary

Contribution ID: 15

Type: **not specified**

Reduced Formats in Belle II

Tuesday 24 May 2022 09:40 (15 minutes)

Presenter: HERNANDEZ VILLANUEVA, Michel (DESY)

Session Classification: Plenary

Contribution ID: **16**

Type: **not specified**

Reduced Formats in ATLAS

Tuesday 24 May 2022 09:00 (15 minutes)

Presenter: CATMORE, James (University of Oslo (NO))

Session Classification: Plenary

Contribution ID: 17

Type: **not specified**

Real-Time and Trigger Analysis Overview

Tuesday 24 May 2022 10:00 (20 minutes)

Presenters: DOGLIONI, Caterina (University of Manchester (GB)); SOKOLOFF, Michael David (University of Cincinnati (US))

Session Classification: Plenary

Contribution ID: **18**

Type: **not specified**

Real-Time and Trigger Analysis Topics

Session Classification: Plenary

Contribution ID: **19**

Type: **not specified**

Reduced formats for long lived particles in ATLAS

Tuesday 24 May 2022 10:50 (15 minutes)

Presenter: BURZYNSKI, Jackson Carl (Simon Fraser University (CA))

Session Classification: Reduced Formats

Contribution ID: **20**

Type: **not specified**

AFs in CERN

Monday 23 May 2022 14:00 (7 minutes)

Presenter: TEJEDOR SAAVEDRA, Enric (CERN)

Session Classification: Analysis Facilities

Contribution ID: **21**

Type: **not specified**

AFs in CMS

Monday 23 May 2022 14:10 (7 minutes)

Presenter: GRAY, Lindsey (Fermi National Accelerator Lab. (US))

Session Classification: Analysis Facilities

Contribution ID: **22**

Type: **not specified**

AFs in ATLAS

Monday 23 May 2022 14:20 (7 minutes)

Presenters: FORTI, Alessandra (University of Manchester (GB)); HEINRICH, Lukas Alexander (CERN)

Session Classification: Analysis Facilities

Contribution ID: 23

Type: **not specified**

AFs in LHCb

Monday 23 May 2022 14:30 (7 minutes)

Presenter: Dr SKIDMORE, Nicole (University of Manchester)

Session Classification: Analysis Facilities

Contribution ID: 24

Type: **not specified**

Discussion "Bridging analysis frameworks stakeholders and resource providers for future analysis HL-LHC facilities"

Monday 23 May 2022 14:40 (1h 20m)

- Integrating different types of resources/"aaS" available on demand: public and private clouds, and Kubernetes (k8s): what is the best "recipe" for AF?
- "How to marry interactivity with distributed computation?" aspects related to e.g. UI design, resource management policies and debugging tools.
- Analysis containerization, feedback from point of view of users, AF architects, resource providers
- Idea of "dream" Analysis Facility, metrics and evaluation of successful AF characteristics

Presenters: SKIDMORE, Nicole (University of Manchester); SHADURA, Oksana (University of Nebraska Lincoln (US))

Session Classification: Analysis Facilities

Contribution ID: 25

Type: **not specified**

Augmenting PHYSLITE content for sub set of events in ATLAS

Tuesday 24 May 2022 11:50 (15 minutes)

Presenter: HEINRICH, Lukas Alexander (CERN)

Session Classification: Reduced Formats

Contribution ID: 26

Type: **not specified**

Metadata paper: Discussion of next steps

Monday 23 May 2022 14:00 (1 hour)

Presenter: LAYCOCK, Paul James (Brookhaven National Laboratory (US))

Session Classification: Metadata and Systematics

Contribution ID: 27

Type: **not specified**

What analysers want: Infrastructure for systematic variations

Monday 23 May 2022 15:00 (20 minutes)

Presenter: GUIRAUD, Enrico (EP-SFT, CERN)

Session Classification: Metadata and Systematics

Contribution ID: 28

Type: **not specified**

Systematics discussion

Monday 23 May 2022 15:20 (40 minutes)

Session Classification: Metadata and Systematics

Contribution ID: 29

Type: **not specified**

Documentation, examples, benchmarking, interoperability

Tuesday 24 May 2022 10:50 (55 minutes)

4 aspects of documentation: <https://documentation.divio.com/>

interoperability examples:

- histograms: Josh's ROOT workshop talk <https://indico.fnal.gov/event/23628/contributions/237985/>
- RDataFrame / awkward: Ianna's ROOT workshop talk <https://indico.fnal.gov/event/23628/contributions/240305/>
- statistical models: RooFit, zfit, pyhf, ...

Session Classification: Analysis User Experience and Declarative Languages

Contribution ID: **30**

Type: **not specified**

Additional topics & follow-up from previous day

Tuesday 24 May 2022 11:45 (55 minutes)

lessons to be learned from Julia,
future of ADL,
...

Session Classification: Analysis User Experience and Declarative Languages

Contribution ID: 31

Type: **not specified**

Limitations of NanoAOD and possible solutions

Tuesday 24 May 2022 11:20 (15 minutes)

Presenter: CARDWELL, Bryan (University of Virginia (US))

Session Classification: Reduced Formats

Contribution ID: 32

Type: **not specified**

Object Store R&D

Tuesday 24 May 2022 12:20 (15 minutes)

Presenter: SMITH, Nick (Fermi National Accelerator Lab. (US))

Session Classification: Reduced Formats

Contribution ID: **33**

Type: **not specified**

Pickup badges and lunch tickets

Monday 23 May 2022 08:45 (15 minutes)

Contribution ID: **34**

Type: **not specified**

Analysis Facilities

Wednesday 25 May 2022 11:00 (10 minutes)

Presenters: SKIDMORE, Nicole (University of Manchester); SHADURA, Oksana (University of Nebraska Lincoln (US))

Session Classification: Plenary

Contribution ID: 35

Type: **not specified**

ML tools and differentiable computing workflows

Wednesday 25 May 2022 11:10 (10 minutes)

Presenters: HEINRICH, Lukas Alexander (CERN); SIMPSON, Nathan Daniel (Lund University (SE))

Session Classification: Plenary

Contribution ID: 36

Type: **not specified**

“Real-time” online/trigger-level analysis

Wednesday 25 May 2022 11:20 (10 minutes)

Presenters: EULISSE, Giulio (CERN); SOKOLOFF, Michael David (University of Cincinnati (US))

Session Classification: Plenary

Contribution ID: 37

Type: **not specified**

Analysis User Experience and Declarative Languages

Wednesday 25 May 2022 11:30 (10 minutes)

Presenters: HELD, Alexander (New York University (US)); REMBSER, Jonas (CERN)

Session Classification: Plenary

Contribution ID: **38**

Type: **not specified**

Analysis on reduced formats or specialist inputs

Wednesday 25 May 2022 11:40 (10 minutes)

Presenters: REINSVOLD HALL, Allison (Fermilab); SCHAARSCHMIDT, Jana (University of Washington (US)); GOUSKOS, Loukas (CERN)

Session Classification: Plenary

Contribution ID: 39

Type: **not specified**

Bookkeeping and systematics handling

Wednesday 25 May 2022 11:50 (10 minutes)

Presenters: LAYCOCK, Paul James (Brookhaven National Laboratory (US)); KHOO, Teng Jian (Humboldt University of Berlin (DE))

Session Classification: Plenary

Contribution ID: **40**

Type: **not specified**

Discussion

Wednesday 25 May 2022 12:10 (15 minutes)

Session Classification: Plenary

Contribution ID: 41

Type: **not specified**

Closing Words

Wednesday 25 May 2022 12:25 (5 minutes)

Presenter: WATTS, Gordon (University of Washington (US))

Session Classification: Plenary

Contribution ID: 42

Type: **not specified**

Discussion

Session Classification: Plenary

Contribution ID: 43

Type: **not specified**

Discussion

Session Classification: Plenary

Contribution ID: 44

Type: **not specified**

Discussion

Session Classification: Plenary

Contribution ID: 45

Type: **not specified**

Intro

Monday 23 May 2022 14:00 (10 minutes)

Presenters: HEINRICH, Lukas Alexander (CERN); SIMPSON, Nathan Daniel (Lund University (SE))

Session Classification: ML and Autodiff Workflows

Contribution ID: 46

Type: **not specified**

Generative Model Training & ML Infrastructure

Monday 23 May 2022 14:10 (20 minutes)

Presenter: EREN, Engin

Session Classification: ML and Autodiff Workflows

Contribution ID: 47

Type: **not specified**

Differentiable Design Optimization

Monday 23 May 2022 14:30 (20 minutes)

Presenter: STRONG, Giles Chatham (Universita e INFN, Padova (IT))

Session Classification: ML and Autodiff Workflows

Contribution ID: 48

Type: **not specified**

AD beyond Python and ML

Monday 23 May 2022 15:30 (30 minutes)

Presenter: VASILEV, Vassil (Princeton University (US))

Session Classification: ML and Autodiff Workflows

Contribution ID: 49

Type: **not specified**

Discussion

Monday 23 May 2022 14:50 (40 minutes)

Presenters: HEINRICH, Lukas Alexander (CERN); SIMPSON, Nathan Daniel (Lund University (SE))

Session Classification: ML and Autodiff Workflows

Contribution ID: 50

Type: **not specified**

Group Photo

Tuesday 24 May 2022 10:20 (5 minutes)

Contribution ID: 51

Type: **not specified**

News of the Day

Tuesday 24 May 2022 08:58 (2 minutes)

Contribution ID: 52

Type: **not specified**

Discussion: Let's Define the Steps of an Analysis Workflow

Tuesday 24 May 2022 16:30 (1h 30m)

Presenter: GALEWSKY, Benjamin (Univ. Illinois at Urbana Champaign (US))

Session Classification: BoFs and Breakouts

Contribution ID: 53

Type: **not specified**

LHCb HLT1 Monitoring

Tuesday 24 May 2022 16:30 (20 minutes)

Presenter: CRAIK, Daniel Charles (Massachusetts Inst. of Technology (US))

Session Classification: Real-Time and Trigger Analysis

Contribution ID: 54

Type: **not specified**

Discussion

Tuesday 24 May 2022 16:50 (1h 10m)

Session Classification: Real-Time and Trigger Analysis

Contribution ID: 55

Type: **not specified**

News of the Day and Discussion Planning

Wednesday 25 May 2022 09:00 (10 minutes)

Presenter: Dr STEWART, Graeme A (CERN)

Session Classification: Continuing Discussions

Contribution ID: 56

Type: **not specified**

Further Topic Discussion Time

Wednesday 25 May 2022 09:10 (1h 20m)

Session Classification: Continuing Discussions

Contribution ID: 57

Type: **not specified**

Let's Define an Analysis Workflow

Wednesday 25 May 2022 12:00 (10 minutes)

Presenter: GALEWSKY, Benjamin (Univ. Illinois at Urbana Champaign (US))

Session Classification: Plenary