

PyHEP 2019 Workshop

Report of Contributions

Contribution ID: 1

Type: **not specified**

Welcome and workshop overview

Wednesday, October 16, 2019 9:30 AM (15 minutes)

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

Session Classification: Welcome and workshop overview

Contribution ID: 2

Type: **not specified**

Overview of the SSI and reproducible research software

Wednesday, October 16, 2019 9:45 AM (30 minutes)

Presenter: MANGHAM, Sam (Software Sustainability Institute, U.K.)

Session Classification: Research software

Contribution ID: 3

Type: **not specified**

The Scikit-HEP project

Wednesday, October 16, 2019 10:15 AM (30 minutes)

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

Session Classification: Research software

Contribution ID: 4

Type: **not specified**

Packaging for Python and beyond

Wednesday, October 16, 2019 11:15 AM (30 minutes)

Presenter: BURR, Chris (CERN)

Session Classification: Packaging, distribution, CI

Contribution ID: 5

Type: **not specified**

scikit-validate - physics validation for small software projects

Wednesday, October 16, 2019 11:45 AM (30 minutes)

Presenter: Dr KRECZKO, Lukasz (University of Bristol (GB))

Session Classification: Packaging, distribution, CI

Contribution ID: 6

Type: **not specified**

GPU Computing via Python's Context Management for Beam Dynamics Simulations

Wednesday, October 16, 2019 2:00 PM (30 minutes)

Presenter: OEFTIGER, Adrian (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE))

Session Classification: Accelerators-enabled code

Contribution ID: 7

Type: **not specified**

Introducing SixTrackLib: a versatile, hardware-accelerated single-particle tracking library

Wednesday, October 16, 2019 2:30 PM (30 minutes)

Presenter: SCHWINZERL, Martin (University of Graz (AT))

Session Classification: Accelerators-enabled code

Contribution ID: 8

Type: **not specified**

hepaccelerate: data analysis with jagged arrays on GPUs

Wednesday, October 16, 2019 3:00 PM (30 minutes)

Presenter: PATA, Josep (California Institute of Technology (US))

Session Classification: Accelerators-enabled code

Contribution ID: 9

Type: **not specified**

Readable and efficient HEP data analysis with bamboo

Wednesday, October 16, 2019 5:00 PM (30 minutes)

Presenter: DAVID, Pieter (Universite Catholique de Louvain (UCL) (BE))

Session Classification: HEP Python software ecosystem

Contribution ID: **10**

Type: **not specified**

Particles and decays

Wednesday, October 16, 2019 5:30 PM (30 minutes)

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

Session Classification: HEP Python software ecosystem

Contribution ID: **11**

Type: **not specified**

Introduction to iminuit

Friday, October 18, 2019 11:00 AM (30 minutes)

Presenter: Dr DEMBINSKI, Hans Peter (Max-Planck-Institute for Nuclear Physics, Heidelberg)

Session Classification: Statistics

Contribution ID: 12

Type: **not specified**

Statistical Methods in the NPStat Package

Friday, October 18, 2019 11:30 AM (30 minutes)

Presenter: VOLOBOUEV, Igor (Texas Tech University (US))

Session Classification: Statistics

Contribution ID: 13

Type: **not specified**

Computing coverage with NumPy and Numba of Bayesian and Frequentist intervals

Friday, October 18, 2019 12:00 PM (30 minutes)

Presenter: DEMBINSKI, Hans Peter (Max-Planck-Institute for Nuclear Physics, Heidelberg)

Session Classification: Statistics

Contribution ID: 14

Type: **not specified**

PyROOT

Friday, October 18, 2019 12:30 PM (30 minutes)

Presenter: GALLI, Massimiliano

Session Classification: PyROOT

Contribution ID: 15

Type: **not specified**

zfit

Friday, October 18, 2019 9:00 AM (30 minutes)

Presenter: ESCHLE, Jonas (Universitaet Zuerich (CH))

Session Classification: Statistics

Contribution ID: **16**

Type: **not specified**

pyhf

Friday, October 18, 2019 9:30 AM (30 minutes)

Presenter: FEICKERT, Matthew (Univ. Illinois at Urbana Champaign (US))

Session Classification: Statistics

Contribution ID: 17

Type: **not specified**

Fast likelihood analysis in more dimensions for Xenon TPCs

Friday, October 18, 2019 10:00 AM (30 minutes)

Presenter: PELSSERS, Bart (Stockholm University)

Session Classification: Statistics

Contribution ID: **18**

Type: **not specified**

Python histogramming packages

Thursday, October 17, 2019 4:15 PM (45 minutes)

Presenter: SCHREINER, Henry Fredrick (Princeton University)

Session Classification: Histogramming & news on Python 3.8

Contribution ID: **19**

Type: **not specified**

Hands-on

Thursday, October 17, 2019 5:00 PM (1 hour)

Presenter: SCHREINER, Henry Fredrick (Princeton University)

Session Classification: Histogramming & news on Python 3.8

Contribution ID: 20

Type: **not specified**

Panel: Turn your existing Python analysis code into deployable dashboards

Thursday, October 17, 2019 9:00 AM (40 minutes)

KEYNOTE PRESENTATION:

Over the last decade the Python scientific ecosystem have become an incredibly powerful toolkit for performing analyses and visualizing data. Once an analysis is done it often has to be shared with a wider audience, either within an organization or with the wider public, but this step often requires an entirely different set of tools and skillset. Panel is a new, open-source Python library built to easily wrap the outputs of an analysis, combine them with widgets and then lay them out as an interactive app or dashboard. This enables faster iteration cycles within organizations and ensures users without in-depth familiarity with web programming can develop and deploy complex dashboards with minimal code.

Panel natively supports a wide range of plotting tools and many other types of data making it trivial to work with the tools users are already familiar with. A complex interactive Panel-based dashboard is typically many times shorter than the equivalent Dash or Bokeh code, focusing on expressing relationships between widgets, computation, and visualizations directly. At the same time Panel is not limited to building simple apps and can be used to visualize complex, multi-stage analysis pipelines, provides full styling flexibility using CSS and Bokeh themes and has the ability to dynamically resize to the size of the browser window.

Once an application is built either in a Python script or notebook it can trivially be deployed as a standalone app using Bokeh Server without any change in behavior. Alternatively, Panel apps can be exported to static HTML files by defining Javascript based interactions or even recording and embedding the app's state space, making it possible to share interactive visualizations as self-contained files.

In the talk we will discover some of the core ideas behind Panel, go through the process of making an existing Jupyter notebook deployable as a dashboard and finally look at a number of case studies of real world dashboards analyzing large volumes of scientific data. With Panel, your analyses and visualizations can now very easily leap from your notebook or custom scripts into the real world!

Presenter: RUDIGER, Philipp (Anaconda)

Session Classification: Visualisation

Contribution ID: 21

Type: **not specified**

mpl-hep - HEP needs for visualization

Thursday, October 17, 2019 9:40 AM (30 minutes)

Presenter: NOVAK, Andrzej (RWTH Aachen (DE))

Session Classification: Visualisation

Contribution ID: 22

Type: **not specified**

Awkward 1.0

Thursday, October 17, 2019 3:00 PM (30 minutes)

Presenter: PIVARSKI, Jim (Princeton University)

Session Classification: Analysis fundamentals

Contribution ID: 23

Type: **not specified**

Writing files with uproot

Thursday, October 17, 2019 2:30 PM (30 minutes)

Presenter: DAS, Pratyush (Institute of Engineering and Management, Kolkata)

Session Classification: Analysis fundamentals

Contribution ID: 24

Type: **not specified**

Coffea

Thursday, October 17, 2019 11:50 AM (30 minutes)

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

Session Classification: High-level Analysis Tools

Contribution ID: 25

Type: **not specified**

F.A.S.T.

Thursday, October 17, 2019 12:20 PM (30 minutes)

Presenter: KRIKLER, Benjamin (University of Bristol (GB))

Session Classification: High-level Analysis Tools

Contribution ID: 26

Type: **not specified**

SWAN

Thursday, October 17, 2019 10:40 AM (30 minutes)

Presenter: CASTRO, Diogo (CERN)

Session Classification: Analysis platforms

Contribution ID: 27

Type: **not specified**

Parsl live-coding session

Thursday, October 17, 2019 11:10 AM (30 minutes)

Presenter: CLIFFORD, Ben

Session Classification: Analysis platforms

Contribution ID: 28

Type: **not specified**

Aside: quick news on Python 3.8

Thursday, October 17, 2019 4:00 PM (15 minutes)

Presenter: SCHREINER, Henry Fredrick (Princeton University)

Session Classification: Histogramming & news on Python 3.8

Contribution ID: 29

Type: **not specified**

Workshop closeout

Friday, October 18, 2019 1:00 PM (5 minutes)

Presenters: KRIKLER, Benjamin (University of Bristol (GB)); RODRIGUES, Eduardo (University of Cincinnati (US))

Session Classification: Closeout