



# 26TH INTERNATIONAL CONFERENCE ON COMPUTING IN HIGH ENERGY & NUCLEAR PHYSICS (CHEP2023)

## Monday, May 8, 2023

### Track 6 - Physics Analysis Tools: Statistical Inference and Fitting - Hampton Roads Ballroom VIII (11:00 AM - 12:30 PM)

-Conveners: Alexander Held; Stephan Hageboeck

time	[id] title	presenter
11:00 AM	[447] RooFit's new heterogeneous computing backend	REMBSER, Jonas
11:15 AM	[389] Making Likelihood Calculations Fast: Automatic Differentiation Applied to RooFit	SINGH, Garima
11:30 AM	[488] Build-a-Fit: RooFit configurable parallelization and fine-grained benchmarking tools for order of magnitude speedups in your fits	WOLFFS, Zef
11:45 AM	[535] New developments in Minuit2	MONETA, Lorenzo
12:00 PM	[605] Bayesian methodologies in particle physics with pyhf	HORSTMANN, Malin
12:15 PM	[618] A multidimensional, event-by-event, statistical weighting procedure for signal to background separation	BALDWIN, Zachary

### Track 6 - Physics Analysis Tools: I/O and Data Formats - Hampton Roads Ballroom VIII (2:00 PM - 3:30 PM)

-Conveners: Dave Heddle; Stephan Hageboeck

time	[id] title	presenter
2:00 PM	[133] DUNE HDF5 Experience	Dr CHOWDHURY, Barnali
2:15 PM	[496] Schema-Evolution and the TTree within HDF5	EICHLERSMITH, Tom
2:30 PM	[444] ROOT's RNTuple I/O Subsystem: The Path to Production	BLOMER, Jakob
2:45 PM	[435] Integration of RNTuple in ATLAS Athena	Mrs DE GEUS, Florine
3:00 PM	[134] Improving ROOT I/O Performance for Analysis	CANAL, Philippe
3:15 PM	[149] Boosting RDataFrame performance with transparent bulk event processing	GUIRAUD, Enrico

## Tuesday, May 9, 2023

### **Track 6 - Physics Analysis Tools: Machine Learning in Analysis - Hampton Roads Ballroom VIII (11:00 AM - 12:30 PM)**

-Conveners: Alexander Held; Dave Heddle

time	[id] title	presenter
11:00 AM	[150] Binning high-dimensional classifier output for HEP analyses through a clustering algorithm	EICH, Niclas
11:15 AM	[337] Deep generative models for generating Drell-Yan events in the ATLAS collaboration at the LHC	JU, Xiangyang
11:30 AM	[414] Unbiased detection of data departures from expectations with machine learning	GROSSO, Gaia
11:45 AM	[442] Data driven background estimation in HEP using Generative Adversarial Networks	LOHEZIC, Victor
12:00 PM	[458] An Active Learning application in a dark matter search with ATLAS PanDA and iDDS	WEBER, Christian
12:15 PM	[587] Deep Learning for Matrix Element Method	NEUBAUER, Mark

### **Track 6 - Physics Analysis Tools: Reconstruction and Amplitude Fitting - Hampton Roads Ballroom VIII (2:00 PM - 3:30 PM)**

-Conveners: Nicole Skidmore; Dave Heddle

time	[id] title	presenter
2:00 PM	[35] A Kinematic Kalman Filter Track Reconstruction Algorithm for the Mu2e Experiment	BROWN, David
2:15 PM	[37] MEDUSA, A MULTITHREAD 4-BODY DECAY FITTING AND SIMULATION SOFTWARE	Dr RICCI, Alessandro Maria
2:30 PM	[99] Event Generator Tuning Incorporating MC Systematic Uncertainty	JU, Xiangyang
3:00 PM	[608] `epic-analysis`: Common Physics Analysis Software for the EIC	DILKS, Christopher
3:15 PM	[360] Laurelin: A ROOT I/O implementation for Apache Spark	MELO, Andrew

### **Track 6 - Physics Analysis Tools: Physics Analysis Workflows - Hampton Roads Ballroom VIII (4:30 PM - 6:00 PM)**

-Conveners: Stephan Hageboeck; Nicole Skidmore

time	[id] title	presenter
4:30 PM	[292] Benchmarking distributed-RDataFrame with CMS analysis workflows on the INFN analysis infrastructure	SPIGA, danielle
4:45 PM	[355] RootInteractive tool for multidimensional statistical analysis, machine learning and analytical model validation	EULISSE, Giulio
5:00 PM	[365] Physics analysis for the HL-LHC: concepts and pipelines in practice with the Analysis Grand Challenge	HELD, Alexander
5:15 PM	[369] First implementation and results of the Analysis Grand Challenge with a fully Pythonic RDataFrame	PADULANO, Vincenzo Eduardo
5:30 PM	[256] PyPWA: A Software Toolkit for Parameter Optimization and Amplitude Analysis	Mr JONES, Mark

5:45 PM	[565] Analysis Productions: A declarative approach to ntupling	BURR, Chris
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# Thursday, May 11, 2023

**Track 6 - Physics Analysis Tools: AM Parallel - Hampton Roads Ballroom VIII (11:15 AM - 12:45 PM)****-Conveners: Dave Heddle; Stephan Hageboeck**

time	[id] title	presenter
11:15 AM	[86] High-performance end-user analysis in pure Julia programming language	LING, Jerry
11:30 AM	[223] Extracting Columnar Event Data From Experiment Specific Data Formats At Scale	GALEWSKY, Ben
11:45 AM	[338] Awkward Just-In-Time (JIT) Compilation: A Developer's Experience	SCHREINER, Henry
12:00 PM	[362] The New Awkward Ecosystem	IFRIM, Ioana
12:15 PM	[465] Data Management Package for the novel data delivery system, ServiceX, and Applications to various physics analysis workflows	CHOI, KyungEon
12:30 PM	[469] Interpreting C++20 and CUDA, with profiling and debugging	CANAL, Philippe

**Track 6 - Physics Analysis Tools: PM Parallel - Hampton Roads Ballroom VIII (2:00 PM - 3:30 PM)****-Conveners: Alexander Held; Nicole Skidmore**

time	[id] title	presenter
2:00 PM	[385] CP Algorithms: A common corrections framework for ATLAS	KRUMNACK, Nils
2:15 PM	[462] PHYSLITE - a new reduced common data format for ATLAS	SCHAARSCHMIDT, Jana
2:30 PM	[386] Columnar analysis and on-the-fly analysis corrections at ATLAS	KRUMNACK, Nils
2:45 PM	[487] podio v1.0 - A first stable release of the EDM toolkit	MADLENER, Thomas
3:00 PM	[602] The QuantOm Event-Level Inference Framework	LERSCH, Daniel
3:15 PM	[443] Speeding up amplitude analysis with a Computer Algebra System	DE BOER, Remco