

Session Program

10-15 Mar 2019



ACAT 2019

Track 1: Computing Technology for Physics Research

Steinmatte conference center
Hotel Allalin, Saas Fee, Switzerland <https://allalin.ch/conference/>

Monday 11 March

15:30

Track 1: Computing Technology for Physics Research

Session | **Location:** Steinmatte Plenary | **Conveners:** Patricia Mendez Lorenzo, Gordon Watts

15:30-15:50 The Practitioner's C++17 and 20 News

Speaker

Axel Naumann

15:50-16:10 The NanoAOD event data format in CMS

Speaker

Marco Peruzzi

16:10-16:30 A more Pythonic, Interoperable and Modern PyROOT

Speaker

Stephan Hageboeck

16:30-16:50 ROOT Based Analysis: From Data to Plots, Expressive, Easy and Fast

Speaker

Lorenzo Moneta

16:50-17:10 New ROOT graphics language

Speaker

Iliana Betsou

17:10-17:30

DataForge: declarative approach to scientific data processing automation

Speaker

Dr Alexander Nozik

17:30

18:00

Track 1: Computing Technology for Physics Research

Session | **Location:** Steinmatte Plenary | **Conveners:** Gordon Watts, Patricia Mendez Lorenzo

18:00-18:20

Automated and Intelligent Data Migration Strategy in High Energy Physical Storage Systems

Speaker

Zhenjing Cheng

18:20-18:40

Using DODAS as deployment manager for smart caching of CMS data management system

Speaker

Mirco Tracoli

18:40-19:00

Cross-domain Data Access System for Distributed Sites in HEP

Speaker

Mr Qi Xu

19:00-19:20

Federated data storage evolution in HENP: data lakes and beyond

Speaker

Andrey Zarochentsev

19:30

Tuesday 12 March

15:30

Track 1: Computing Technology for Physics Research

Session | Location: Steinmatte Plenary | Conveners: Patricia Mendez Lorenzo, Gordon Watts

15:30-15:50 **The computing model of the LHCb Upgrade**

Speaker

Marco Cattaneo

15:50-16:10 **The core software framework for the LHCb Upgrade**

Speaker

Niklas Nolte

16:10-16:30 **An analytics driven computing model for HL-LHC**

Speaker

David Lange

16:30-16:50 **The ATLAS EventIndex and its evolution towards LHC Run 3**

Speaker

Miguel Villaplana

16:50-17:10

Machine Learning Techniques in the ATLAS TDAQ Network Monitoring System

Speaker

Oskar Wyszynski

17:30

18:00

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18:00-18:20

Heterogenous computing for the local reconstruction algorithms of the CMS calorimeters

Speaker

Andrea Massironi

18:20-18:40 **A 30 MHz software trigger and reconstruction for the LHCb upgrade**

Speaker

Conor Fitzpatrick

18:40-19:00

Continuous Analysis in ATLAS: Running User-Defined Container Images on the Grid

Speaker

Lukas Alexander Heinrich

19:00-19:20

FPGA-accelerated machine learning inference as a solution for particle physics computing challenges

20:00

Speaker
Jennifer Ngadiuba

Wednesday 13 March

15:30

Track 1: Computing Technology for Physics Research

Session | **Location:** Steinmatte Plenary | **Conveners:** Gordon Watts, Patricia Mendez Lorenzo

15:30-15:50 **Simulating Diverse HEP Workflows on Heterogeneous Architectures**

Speaker

Dr Charles Leggett

15:50-16:10

The Central Hint and Information Processor system for automation, error detection and recovery in the ATLAS TDAQ Controls framework

Speaker

Giuseppe Avolio

16:10-16:30

The "FELIX" detector interface for the ATLAS Trigger and Data Acquisition upgrades and its deployment in the ATLAS Inner Tracker demonstrator setup

Speaker

Carlos Solans Sanchez

16:30-16:50

The second generation of the ATLAS Production System: expertise and future evolution

Speaker

Misha Borodin

16:50-17:10

Fast Deep Learning on FPGAs for the Phase-II L0 Muon Barrel Trigger of the ATLAS Experiment

Speaker

Simone Francescato

17:10-17:30

Towards a heterogeneous High Level Trigger farm for CMS

Speaker

Dr Andrea Bocci

17:50

18:00

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18:00-18:20 **CMS Software and Offline preparation for future runs**

Speakers

Collaboration CMS, Tommaso Boccali

18:20-18:40

Deep learning for certification of the quality of the data acquired by the CMS experiment

Speaker
Adrian Alan Pol

18:40-19:00

Real-time cluster finding for LHCb silicon pixel VELO detector using FPGA

Speaker
Federico Lazzari

19:00-19:20

Migrating large codebases to C++ Modules

Speaker
Yuka Takahashi

19:30

Thursday 14 March

15:30

Track 1: Computing Technology for Physics Research

Session | **Location:** Steinmatte Plenary | **Conveners:** Gordon Watts, Patricia Mendez Lorenzo

15:30–15:50

Design Pattern for Analysis Automation on Interchangeable, Distributed Resources using Luigi Analysis Workflows

Speaker

Marcel Rieger

15:50–16:10

Roofit parallelization efforts

Speaker

Dr Patrick Bos

16:10–16:30

Core software challenges of the GPU High Level Trigger 1 of LHCb

Speaker

Daniel Hugo Campora Perez

16:30–16:50

Highly performant, Deep Neural Networks with sub-microsecond latency on FPGAs for trigger applications

Speaker

Noel Aaron Nottbeck

16:50–17:10

Nested data structures in array and SIMD frameworks

Speaker

Jim Pivarski

17:10–17:30

Vectorization of random number generation and reproducibility of concurrent particle transport simulation

Speaker

Soon Yung Jun

17:30

18:00

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18:00–18:20

Performance results of the GeantV prototype with complete EM physics

Speaker

Andrei Gheata

18:20–18:40

Generative Adversarial Networks for fast simulation: generalisation and distributed training in HPC

Speaker

Sofia Vallecorsa

18:40-19:00

Multi-threaded Event Reconstruction with JANA

Speaker

David Lawrence

19:00-19:20

STAR Data Production Workflow on HPC: Lessons Learned & Best Practices

Speakers

Michael Poat, Jefferson Porter, Jan Balewski

20:10