

## **Session Program**

**November 29, 2021 to December 3, 2021**



## **ACAT 2021**

### ***Track 1: Computing Technology for Physics Research***

Virtual and IBS Science Culture Center, Daejeon, South Korea, Auditorium  
55 EXPO-ro Yuseong-gu Daejeon, South Korea email: [library@ibs.re.kr](mailto:library@ibs.re.kr) +82 42 878 8299

# Mon, November 29

5:20 PM

## Track 1: Computing Technology for Physics Research

### Session |

**Location:** Virtual and IBS Science Culture Center, S221-A, 55 EXPO-ro Yuseong-gu Daejeon, South Korea email: library@ibs.re.kr +82 42 878 8299 |

**Conveners:** Patricia Mendez Lorenzo, Chang-Seong Moon

17:20 - 17:40

### Anomaly Detection of I/O behaviors in HEP computing cluster based on unsupervised machine learning

#### Speaker

Lu Wang

17:40 - 18:00

### End to end learning with an Optical Processing Unit

#### Speaker

David Rousseau

18:00 - 18:20

### Clustering in the Heterogeneous Reconstruction Chain of the CMS HGCal Detector

#### Speaker

Bruno Alves

18:20 - 18:40

### Predicting Alice Grid throughput using recurrent neural networks

#### Speaker

Dr Sofia Vallecorsa

18:40 - 19:00

### Managing Heterogeneous Device Memory using C++17 Memory Resources

#### Speaker

Stephen Nicholas Swatman

19:00 - 19:20

### Evaluating Query Languages and Systems for High-Energy Physics Data

#### Speaker

Ingo Müller

7:20 PM

## Tue, November 30

5:00 PM

### Track 1: Computing Technology for Physics Research

#### Session |

**Location:** Virtual and IBS Science Culture Center, S221-A, 55 EXPO-ro Yuseong-gu Daejeon, South Korea email: library@ibs.re.kr +82 42 878 8299 |

**Conveners:** Gordon Watts, Marilena Bandieramonte

17:00 - 17:20

#### Commissioning LHCb's GPU High Level Trigger

##### Speaker

Christina Agapopoulou

17:20 - 17:40

#### CMS High Level Trigger performance comparison on CPUs and GPUs

##### Speakers

Andrea Bocci, CMS Collaboration

17:40 - 18:00

#### GPU Acceleration of the ATLAS Calorimeter Clustering Algorithm

##### Speaker

Nuno Dos Santos Fernandes

18:00 - 18:20

#### Z-vertex Track Trigger operation in 2021 for Belle II - a hardware perspective

##### Speaker

Kai Lukas Unger

18:20 - 18:40

#### Offloading electromagnetic shower transport to GPUs: the AdePT project

##### Speaker

Andrei Gheata

18:40 - 19:00

#### GPU Acceleration of Automatic Differentiation in C++ with Clad

##### Speaker

Ioana Ifrim

19:00 - 19:20

#### Demonstration of FPGA Acceleration of Monte Carlo Simulation

##### Speaker

Marco Barbone

7:20 PM

# Wed, December 1

5:00 PM

## Track 1: Computing Technology for Physics Research

### Session |

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**Conveners:** Marilena Bandieramonte, Gordon Watts

17:00 - 17:20

### Offline Software Framework for the Super Tau Charm Facility

#### Speaker

Wenhao Huang

17:20 - 17:40

### Parallel processing in data analysis of the JUNO experiment

#### Speaker

Yixiang Yang

17:40 - 18:00

### The new GeoModel suite, a lightweight detector description and visualization toolkit for HEP

#### Speaker

Riccardo Maria Bianchi

18:00 - 18:20

### detray - A compile-time polymorphic tracking geometry description

#### Speaker

Joana Niermann

18:20 - 18:40

### Design of a request/response buffering application for I/O intensive workloads

#### Speaker

Florian Till Groetschla

18:40 - 19:00

### The ATLAS Data Carousel Project Status and Plans.

#### Speaker

Alexei Klimentov

19:00 - 19:20

### Exploring data merging methods for a distributed processing system

#### Speaker

Piotr Konopka

7:20 PM

## Thu, December 2

11:00 AM

### Track 1: Computing Technology for Physics Research

#### Session |

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**Conveners:** Gordon Watts, Matthew Feickert

11:00 - 11:20

#### Evaluating awkward arrays, uproot, and coffea as a query platform for High Energy Physics data

##### Speaker

Nick Smith

11:20 - 11:40

#### Lessons learned in Python-C++ integration

##### Speaker

Jim Pivarski

11:40 - 12:00

#### ROOT Files Improved with Extreme Compression

##### Speakers

Gene Van Buren, Jerome LAURET, Ivan Amos Cali, Dr Juan Gonzalez, Philippe Canal, Mr Rafael Nunez, Yueyang Ying

12:00 - 12:20

#### Accelerating the Inference Time of Machine Learning-based Track Finding Pipeline

##### Speaker

Alina Lazar

12:20 - 12:40

#### Reconstruction for Liquid Argon TPC Neutrino Detectors Using Parallel Architectures

##### Speaker

Sophie Berkman

1:00 PM