

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



**Monday, May 8, 2023 - Friday, May 12, 2023**

**Norfolk Waterside Marriott**

## **Scientific Program**

## Poster

### **Track 1 - Data and Metadata Organization, Management and Access**

Storage management frameworks; data access protocols; object, metadata and event store systems; content delivery and caching; data analytics; FAIR data principles; non-event data; data classification; online and offline databases.

### **Track 2 - Online Computing**

Data acquisition; high-level triggers; streaming and trigger-less data acquisition; online data calibration; online reconstruction; real-time analysis; event building; configuration and access controls; detector control systems; real-time analytics and monitoring; trigger techniques and algorithms; hardware trigger algorithms.

### **Track 3 - Offline Computing**

MC event generation; detector simulation; fast simulation; offline reconstruction; detector calibration; detector geometries; data quality systems; data preparation; physics performance.

### **Track 4 - Distributed Computing**

Grid middleware; monitoring and accounting frameworks; security models and tools; distributed workload management; federated authentication and authorisation infrastructures; middleware databases; software distribution and containers; heterogeneous resource brokerage.

### **Track 5 - Sustainable and Collaborative Software Engineering**

Software frameworks; collaborative software; sustainable software; software management, continuous integration; software building; testing and quality assurance; software distribution; programming techniques and tools; integration of external toolkits.

### **Track 6 - Physics Analysis Tools**

Analysis algorithms; object identification; object calibration; analysis workflows; lattice QCD; theory calculations; high performance analysis frameworks.

## **Track 7 - Facilities and Virtualization**

Cloud resources; HPC and supercomputers; deployment of virtual machines and container technologies; anything-as-a-service; private and commercial clouds; dynamic provisioning; networking; computing centre infrastructure; management and monitoring; analysis facilities.

## **Track 8 - Collaboration, Reinterpretation, Outreach and Education**

Collaborative tools; reinterpretation tools; analysis preservation and reuse; data preservation for collaboration; outreach activities; open data for outreach; training initiatives; event displays; open science cloud initiatives.

## **Track 9 - Artificial Intelligence and Machine Learning**

Machine learning algorithms; machine learning for online; machine learning for simulation and reconstruction; machine learning tools and techniques for analysis; machine learning for reinterpretation; massive scale machine learning; hyperparameter optimization.

## **Track 10 - Exascale Science**

Algorithm scaling; exascale computing models; exabyte-scale datasets; exaflop computing power; generic algorithms; weak scaling.

## **Track 11 - Heterogeneous Computing and Accelerators**

Compute accelerators; concurrency in software frameworks; accelerator-as-a-service; FPGA programming; software design and implementation for heterogeneous architectures; heterogeneous resource usage for online and offline.

## **Track 12 - Quantum Computing**

Quantum computing for theory calculations; quantum computing for event generation, simulation and reconstruction; quantum computing for analysis; quantum computing applications.