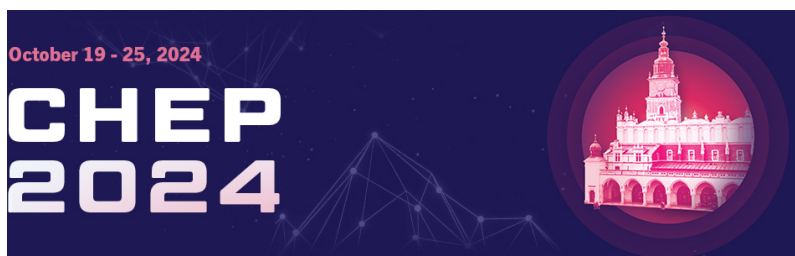


# Conference on Computing in High Energy and Nuclear Physics



**Saturday, 19 October 2024 - Friday, 25 October 2024**

## **Scientific Programme**

## **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 (including ML); online and offline databases; exabyte-scale datasets.

## **Track 2 - Online and real-time computing**

Data acquisition; triggers; streaming and trigger-less data acquisition; online calibration/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; ML for triggers or outlier detection; accelerators and hybrid computing for online computing.

## **Track 3 - Offline Computing**

Offline reconstruction; detector calibration; detector geometries; data quality systems; data preparation; physics performance; compute accelerators and hybrid computing for offline; ML for offline computing/calibration/outlier detection; quantum algorithms and general quantum computing technologies.

## **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 - Simulation and analysis tools**

Object identification; object calibration; analysis workflows; software for end-user analysis; ML in analysis workflows; lattice QCD; theory calculations; MC event generation; detector simulation; fast simulation (classic and ML); quantum simulation and algorithms.

## **Track 6 - Collaborative software and maintainability**

Collaborative software; sustainable software; software management, continuous integration; software building; testing and quality assurance; software distribution; programming techniques and tools; integration of external toolkits; Manuals and documentation; ML for documentation, LLMs.

## **Track 7 - Computing Infrastructure**

Opportunistic resources, orchestration of virtual machines and containers; cloud; HPC and exascale; networking; computing centre infrastructure; energy efficiency; cost of computing; management and monitoring; quantum networks.

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

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

## **Track 9 - Analysis facilities and interactive computing**

Frameworks; infrastructure for interactive computing; applications and use-cases; experience with AF production systems and pilots; aspects of reproducibility in interactive computing.

## **Plenary**