Session Program

20–26 Sept 2025

ICALEPCS 2025 - The 20th International Conference on Accelerator and Large Experimental Physics Control Systems

WEPD Posters

Palmer House Hilton Chicago
17 East Monroe Street Chicago, IL 60603, United States of America

Wednesday 24 September

16:30

WEPD Posters

Poster Session |
Location: Palmer House Hilton Chicago, 17 East Monroe Street Chicago, IL 60603, United States of America

LCLS-II cavity heater controls: design, operation, and accuracy

Speaker
Andrew Wilson

Use cases for consistent robust processing of data models

Speaker
Pierre Schnizer

First phase of control system for compact Muon Linac at J-PARC

Speaker
Shuei Yamada

Performance and reliability improvement of a Python-based EPICS IOC by switching to pyDevSup

Speaker
Érico Nogueira Rolim

Performance characterisation of real-time software in C++. A real-life example of digital camera-based acquisition systems at CERN

Speaker
Athanasios Topaloudis

Waveform monitoring system

Speaker
Dan Paskvan

Fermilab's control system development with digital twin

Speaker
Pierrick Hanlet

Xopt and Badger: a machine learning ecosystem for real-time accelerator control and optimization

Speaker
Ryan Roussel

pvAccess and virtualisation

Speaker
Dr Ivan Finch

Validating VSlib, the voltage source control library used in the fourth generation of function/generator controllers at CERN

Speaker
Dariusz Zielinski

Advanced p4p usage at the ISIS Neutron and Muon Source

Speaker
Dr Ivan Finch

epics-in-docker: a small framework for building slim IOC and EPICS tooling container images

Speaker
Guilherme Rodrigues de Lima

Design of an upgraded analog signal digitizer to replace the MADC system at RHIC

Speaker
Paul Bachek

Control system design for the new SMH16 pulsed current generator in the CERN PS extraction system

Speaker
Christophe Boucly

Physics application software for FRIB: from commissioning to operational excellence

Speaker
Tong Zhang

Enhancing SIRIUS fast orbit feedback actuators using IIR filters

Speaker
Guilherme Ricioli

MeerKAT antenna positioner emulator test bench project

Speaker
Buntu Ngcebetsha

Graphical interfaces and integration tools for particle accelerator digital twins

Speaker
Jonathan Edelen

EPICS IOC Extension Points: Old, Recent, and Proposed

Speaker
Andrew Johnson

HL-LHC Inner Triplet String controls and software architecture

Speaker
Sebastien Blanchard

SKA control system in 2025

Speaker
Ms Sonja Vrcic

Object-oriented industrial I/O for EPICS on NI cRIO: reusable LabVIEW-FPGA bitfiles via the NI C API

Speaker
Rocio Martin

Laser Megajoule facility status report

Speaker
Dr Stephanie PALMIER

Control and assembly of complex bend magnet for proposed NSLS-II upgrade

Speaker
Yuke Tian

An FPGA-based autoencoder model for real-time RF signal denoising for industrial accelerators

Speaker
Vikshar Rajesh

A high-precision motion profile data stream pipeline for LCLS-II fast wire scanner

Speaker
Ziyu Huang

PvPlot: A live software oscilloscope library for accelerator control systems

Speaker
Eric Westbrook

Using C++ templates for correct and efficient hardware access

Speaker
Richard Neswold

Automated sample identification and registration system for the MOGNO beamline at SIRIUS

Speaker
Lucas Eduardo Pinho Vecina

CANModule: a lightweight, vendor-neutral CAN bus abstraction library for simplified integration and diagnostics

Speaker
Luis Miguens Fernandez

Reinforcement learning for automation of accelerator tuning

Speaker
Jonathan Edelen

APOLLO: a facility-scale differentiable virtual accelerator at Fermilab FAST/IOTA

Speaker
Nikita Kuklev

Bayesian active learning for converging posteriors in latent variable inference for control systems

Speaker
Kilean Hwang

The EuAPS betatron radiation source control system

Speaker
Valentina Dompè

Modernizing FPGA development using the DESY FPGA firmware framework

Speaker
David Vassallo

Proton pulse charge calculation algorithm in Beam Power Limiting System at the Spallation Neutron Source

Speaker
Miljko Bobrek

Status of development and application of the Pyapas at HEPS

Speaker
Mr Yuliang Zhang

A serverless control system

Speaker
John Diamond

Real time computations of cryogenic He properties

Speaker
Pierrick Hanlet

Logging infrastructure for EPICS-based control systems using Loki and Promtail

Speaker
Jesse Bellister

Fast archiving for BPM data at ALS-U

Speaker
Vamsi Vytla

Particle accelerator simulation using GPUs in Accelerator Toolbox

Speaker
Mr Theo Rozier

Swarm and bayesian optimization strategies for the PIAVE-ALPI accelerators at LNL

Speaker
Mauro Giacchini

Modernizing software and hardware for LANSCE EVR with FPGA and Real Time Linux

Speaker
Zane Sauer

WREN: A versatile White Rabbit Event Node for CERN’s timing system renovation

Speaker
Evangelia Gousiou

Toward particle accelerator machine state embeddings as a modality for large language models

Speaker
Thorsten Hellert

Development of an EPICS-based control platform for electron beam commissioning at ELI-NP

Speaker
Mr Aurelian Ionescu

The Tango AlarmHandler: advancements in core functionality and tools

Speaker
Lorenzo Pivetta

Upgrading the ATLAS tune archiving system

Speaker
Kenneth Bunnell

ATLAS DEMO Inheritance commissioning and performance testing using SCADA and PLC based automatized procedures

Speaker
Lukasz Zwalinski

Commissioning and operation of vacuum control system for SPES project

Speaker
Loris Antoniazzi

Extension of the SPIRAL2 PLC-based control system for the integration of DESIR and NEWGAIN

Speaker
Quentin Tura

Development status of FPGA-based FOFB system for PLS-II

Speaker
Wooseong Cho

Flexible containerised deployment of EPICS IOCs via CI/CD

Speaker
Aqeel AlShafei

Modular scientific SCADA suite with Sardana and Taurus – latest developments

Speakers
Dr Fulvio Becheri, Michal Piekarski, Vanessa Da Silva

Implementation and scalability analysis of TSPP for Vacuum Framework

Speaker
Rodrigo Ferreira

SOLEIL II: enhancing data management and computing for tomorrow’s science

Speaker
Yves-Marie Abiven

Study design of a model-based controller for time varying delay compensation in a cryogenics process

Speaker
Marco Pezzetti

Geoff developments in 2025

Speaker
Jutta Fitzek

Simplifying cryogenic process control at ESS LINAC through automation: development and integration of an automatic control sequence

Speaker
Mr Wojciech Bińczyk

Field deployment and iterative enhancement of the dish structure qualification (DiSQ) software for SKA-Mid

Speaker
Mr Ulrik Pedersen

Enabling high-performance PLC communication through open standards: OPC UA PubSub

Speaker
Loreto Gutierrez Prendes

Open source event timing system at ALS-U

Speaker
Lucas Russo

Towards safe and robust neural network controllers at CERN: a review of methods and challenges

Speaker
Borja Fernandez Adiego

Leveraging local LLM for enhanced log analysis: integrating Ollama into electronic logging systems

Speaker
Wenge Fu

Exploring AI-based models in accelerators: a case study of the SOLARIS synchrotron

Speaker
Michal Piekarski

Libera instruments integration with control systems

Speaker
Aleš Kete

AI-driven device driver generator

Speaker
Mr Lukasz Zytniak

AI-powered scientific chatbot for accelerator operations

Speaker
Mr Lukasz Zytniak

Operational Sequencer for ESS facility

Speaker
Mr Lukasz Zytniak

Scheduler for cooling and ventilation plants: feedback on easy and low cost method for energy savings

Speaker
Nikolina Bunijevac

Digital twin framework for PIP-II linac: AI-driven multi-scale modeling from ion source to 800 MeV

Speaker
Abhishek Pathak

Development of virtual beamline technology for advanced light sources : simulation and application of key components

Speaker
Miao Zhang

AI and ML integration for beamline optimization and virtual assistance at the SOLARIS synchrotron

Speaker
Magdalena Szczepanik

Design of an intelligent inspection system for particle accelerator facilities

Speaker
Yuliang Zhang

Image processing with ML for automated tuning of the NASA Space Radiation Laboratory beam line

Speaker
Levente Hajdu

Accelerator digital twin development through simulation modeling and MLOps using the LUME ecosystem at SLAC

Speaker
Gopika Bhardwaj

Plans and strategy for edge AI/ML at the Electron-Ion Collider at Brookhaven National Laboratory

Speaker
Linh Nguyen

Integrating CODAC in ITER Plant Simulator

Speaker
Ralph Lange

Machine learning–based longitudinal phase space control for X-ray free-electron laser

Speaker
Zihan Zhu

Designing the High-Dynamic Double Crystal Monochromators (HD-DCM-Lite) control system for fast energy scans and beam sub-nanometer stability at SIRIUS

Speaker
Gabriel Oehlmeyer Brunheira

BOLT: beamline operations and learning testbed for EPICS and Bluesky integration

Speaker
Johannes Mahl

Integrated denoising for improved stabilization of RF cavities

Speaker
Jonathan Edelen

Long short-term memory of recurrent neural network to the analysis of temperature rise on the production target in Hadron Experimental Facility of J-PARC

Speaker
Keizo Agari

Reinforcement learning approaches for parameter tuning in particle accelerators

Speaker
Daniele Zebele

Overview and status of the Machine Learning Data Platform project

Speaker
Christopher Allen

Machine learning for ISIS Controls

Speaker
Mateusz Leputa

Using computer vision for online calibration of beam instruments at CERN

Speaker
Javier Martínez Samblas

Modernizing legacy Python applications at LCLS

Speaker
Zachary Lentz

An overview of the FGC4 – CERN’s new power converter controller

Speaker
Dariusz Zielinski

PLC Integrator: A modern tool for PLC-EPICS integration at ESS

Speaker
Adalberto Fontoura

Overview and current status of the SKA-Low Monitoring, Control and Calibration Subsystem (MCCS)

Speaker
Emma Arandjelovic

Design study for integrating EPICS-based control systems with medical treatment apparatus

Speaker
Mauro Giacchini

Study of PLC hardware integration within the CERN controls environment

Speaker
Mr Christophe Boucly

18:00