Session Program

10–15 Aug 2025

NAPAC25 - North American Particle Accelerator Conference 2025

Monday Poster Session

SAFE Credit Union Convention Center
1401 K St, Sacramento, CA 95814

Monday 11 August

16:00

Monday Poster Session

Poster Session | **Location:** SAFE Credit Union Convention Center, Ballroom A

Mitigating IDVC thermal deformation with mechanical constraint for reliable ID minimum gap operation

Speaker
Wei Li

Early Prediction of System Failures at Los Alamos Nuclear Science Center (LANSCE)

Speaker
Nikolai Yampolsky

Performance optimization of the IOTA duoplasmatron proton source

Speaker
Michael Wallbank

A new Python middle layer framework: Particle Accelerator MIddle LAyer (PAMILA)

Speaker
Yoshiteru Hidaka

Bunch duration measurements in the APS-U booster

Speaker
Joseph Calvey

Phase space reconstruction of beams affected by coherent synchrotron radiation

Speaker
Juan Pablo Gonzalez-Aguilera

The beamline steering software for the APS Upgrade (APS-U) Accelerator Storage Ring

Speaker
Hairong Shang

Development and applications of differentiable coherent optical transition radiation simulations

Speaker
Ryan Roussel

High-Throughput, Low-Latency X-ray Characterization for Attosecond XFEL Diagnostics: A Heterogeneous Approach

Speaker
Jack Hirschman

Efficient 6-dimensional phase space measurements and applications to autonomous monitoring at LCLS-II

Speaker
Ryan Roussel

Automated RF phase adjustment for beam stabilization in the Fermilab Linac

Speaker
Ralitsa Sharankova

Machine learning-driven computations of 3D Coherent Synchrotron Radiation

Speaker
Christopher Leon

Machine Learning-Based Reduced-Order Encoding of 6D Particle Phase Space for Accelerators

Speaker
Indranil Nayak

Development of an upgraded fast orbit feedback system for NSLS-IIU

Speaker
Sukho Kongtawong

Design, characterization, and validation of a pulsed RF burst source for in-situ cavity beam position monitor calibration

Speaker
Konstantin Kruchinin

Instrumentation for a prototype fusion propulsion system

Speaker
Grace Bittlingmaier

Machine learning-enhanced infrared imaging for temperature anomaly detection in power supplies

Speaker
Osama Mohsen

Towards real-time calibration of CBPMs using synchronous RF injection

Speaker
Mark McCallum

Design of a BPM pick-up for the EIC electron storage ring

Speaker
Medani Sangroula

X-ray inspection for non-invasive real-time beam detection

Speaker
Prabir Roy

Benchmarking the use of BPM quadrupole moments to measure emittance

Speaker
Michael Balcewicz

A self-supervised transformer for RF cavity signal denoising

Speaker
Vikshar Rajesh

Digital camera performance in a high-radiation accelerator test beam facility

Speaker
Sharon Perez

SEM grid testing at NLCTA in BeamNetUS program

Speaker
Nebiyu Samuel

Transverse phase space tomography at FACET-II

Speaker
Yiheng Ye

Modernizing wire scan diagnostics for reproducible, real-time beam measurements through a modular Python middle layer integrated with EPICS

Speaker
Tyler Kabana

Preliminary study of auto-differentiation algorithm in beam dynamics with stochastic process

Speaker
Christian Ratcliff

Accelerator drift compensation via a modified MG-GPO Algorithm

Speaker
Ryan Yeung

Beam scattering through foil

Speaker
Bhawin Dhital

Modeling of a high-current injector for beam optimization

Speaker
Evan Scott

Development of diamond-based halo monitor diagnostics for an electron accelerator

Speaker
Dongsung Kim

Progress report on the upcoming drive beam photoinjector upgrades at the Argonne Wakefield Accelerator

Speaker
Alexander Ody

Field mapping and alignment procedure for new photoinjector solenoid magnets at the Argonne Wakefield Accelerator

Speaker
Alexander Ody

Fast adaptive neural control of resonant extraction at Fermilab

Speaker
Andrew Whitbeck

Automation of sample identification for neutron beamlines

Speaker
Amelia Chen

Automation of sample alignment for neutron beamlines

Speaker
Amelia Chen

New ACE3P capabilities and code integration of ACE3P with Geant4 and Lume

Speaker
David Bizzozero

Implementation of a temperature and density monitoring diagnostic for the LANSCE negative ion source

Speaker
Charles Rohde

Low-charge, high-resolution beamline preparation for the nanopatterned microbunching experiment at Argonne Wakefield Accelerator

Speaker
Rachel Margraf-O'Neal

Bayesian Calibration of the AWA Photocathode Gun Using YAG Screen Diagnostics and OPAL Simulations

Speaker
Sebastian Heinekamp

Resonant cavity for quadrupole moment measurements of heavy ion beams

Speaker
Alexander Plastun

Analog signal multiplexing system for the IOTA Proton Injector

Speaker
Daniel MacLean

Physics considerations for a harp system design at the Second Target Station of the Spallation Neutron Source

Speaker
Yong Joong Lee

Anomaly detection of slow-moving variables at LANSCE for improved beam quality

Speaker
En-Chuan Huang

Integrating simulation and machine learning for Proton Storage Ring beam analysis

Speaker
Christopher Leon

Synchrotron frequency measurements using bunch by Bunch longitudinal feedback system in a storage-ring with higher harmonic cavity

Speaker
Pavana Kallakuri

Status of longitudinal bunch-by-bunch feedback system at the upgraded Advanced Photon Source

Speaker
Pavana Kallakuri

Oscillation Data Analysis during the LCLS-II Commissioning at SLAC

Speaker
Franz-Josef Decker

Facility-scale differentiable virtual accelerator at Fermilab

Speaker
Nikita Kuklev

Two-stage constrained Bayesian optimization for particle accelerator tuning

Speaker
Fuhao Ji

Advancing accelerator virtual beam diagnostics through Latent Evolution Modeling: An integrated solution to forward, inverse, tuning, and UQ problems

Speaker
Mahindra Rautela

Proposal to measure bunch lengths using a pulse dilation photomultiplier tube

Speaker
Kent Wootton

Proposal to streak optical pulses using a solid state optical deflector

Speaker
Kent Wootton

Online accelerator modeling with two controls systems at FACET-II

Speaker
Zack Buschmann

Nested Extremum Seeking for Virtual Diagnostics and Control

Speaker
Brad Ratto

Surrogate model for third-integer resonance extraction at the Fermilab Delivery Ring

Speaker
Aakaash Narayanan

Detectors and beam monitors based on wide bandgap semiconductors at cryogenic temperatures

Speaker
Dr Sergey Kuzikov

GTPSA.jl: A SciBmad interface to the generalised truncated power series algebra library

Speaker
Oleksii Beznosov

Recent Beam Test Results of RadiaBeam's Multi-Dimensional Bunch Shape Monitor at SNS facility

Speaker
Aurora Cecilia Araujo Martinez

Virtual Critical Coupling Technique for Elimination of Power Reflections in RF Cavities

Speaker
Aurora Cecilia Araujo Martinez

Online optimizations of NSLS-II Linac and Linac-to-Booster beam lines using machine learning methods

Speaker
Minghao Song

Impedance modeling of in-vacuum undulator with Gaussian process

Speaker
Minghao Song

Application of Bayesian optimization to BtA injection at BNL

Speaker
Eiad Hamwi

Machine learning assisted Bayesian calibration of accelerator digital twin from orbit response data

Speaker
Weijian Lin

RF characterization of a cryogenic X-band cavity beam position monitor for superconducting undulator applications at SLAC

Speaker
Konstantin Kruchinin

AtomicAndPhysicalConstants.jl – A fast Julia package to access particle properties and fundamental constants

Micro-fabricated photoconductive sampling devices for electron beam field measurements

Speaker
Veronica Guo

Tool Chain for Simulations of Bi-Filar Coil Winding for Fast Quench Protection

Speaker
Rehan Jayathilaka

Improve beam brightness with bayesian optimization at the AGS booster injection at BNL

Speaker
Weijian Lin

Rotor-based multileaf collimator for beam shaping

Speaker
Nathan Majernik

Upgrade to fixed and translating scintillation-based loss detector system in the Fermilab Drift Tube Linac

Speaker
Erin Chen

A reactive ferroelectric tuner for microphonics compensation

Speaker
Dr Sergey Kuzikov

Resolution enhancement of double-differential spectrometer images

Speaker
Nathan Majernik

Physics-coupled Bayesian algorithm for APS-U nonlinear dynamics tuning

Speaker
Nikita Kuklev

Online multi-objective Bayesian optimization of injection efficiency and beam lifetime with skew quadrupoles at NSLS-II

Speaker
Yoshiteru Hidaka

FPGA implementation of a digital signal component separator and a disturbance compensator for the LANSCE 805 MHz solid-state high power RF amplifier

Speaker
Sungil Kwon

FPGA-based spill regulation system for the Muon Delivery Ring at Fermilab

Speaker
Jose Berlioz

Fabrication Progress of an RF Beam Sweeper for Purifying Rare Isotope Beams

Speaker
Aurora Cecilia Araujo Martinez

Towards accurate beam sigma matrix determination in a transport line using differentiable simulation

Speaker
Chenran Xu

First results of the sXmap cavity field emission detection system from inside a cryomodule

Speaker
Paolo Pizzol

Design of phase diversity Electro-Optic Sampling of THz coherent transition radiation

Speaker
Spencer Kelham

Integrating community codes for accelerator design and optimization

Speaker
Nathan Cook

The control and monitoring system for the APS-U front-end XBPM

Speaker
Shifu Xu

Lifetime extension of legacy CEBAF LLRF hardware

Speaker
Michael Geesaman

Fast beam probe development for longitudinal bunch measurements at UC Davis Crocker Nuclear Laboratory Cyclotron

Speaker
Logan Knudson

Implementation of a 1550-nm laser system for beam characterization at the Argonne Wakefield Accelerator

Speaker
Alexander Ody

Calculating beam extinction in a pulsed proton beam using FPGA-based peak detection

Speaker
Ryan Hensley

Machine learning at the Spallation Neutron Source accelerator and target

Speaker
Dr Willem Blokland

AI-ready control infrastructure for cyclotron systems using GPU-accelerated Python GUIs and LabVIEW over ZeroMQ

Speaker
Claudio Lopez Osses

Ultra-fast switching utilizing an IVA topology for chopper applications

Speaker
Kyle Hansz

Experimental longitudinal emittance manipulation using laser-based photoionization in the Fermilab Linac

Speaker
Parker Landon

Investigation of IPM profile changes with variations in the applied electric field

Speaker
Medani Sangroula

HED-Melt: A coupled framework for modeling high-energy-density conditions in accelerators

Speaker
Austin Dick

Compact 3D electro-optic sampling beam position monitor

Speaker
Tara Hodgetts

18:00