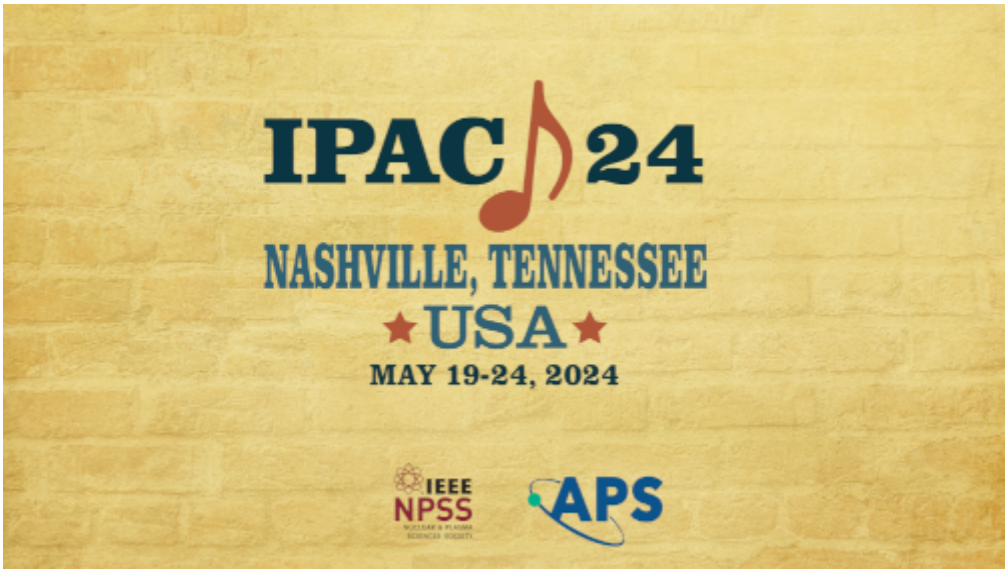
Session Program

19–24 May 2024



IPAC'24 - 15th International Particle Accelerator Conference

Student Poster Session

Music City Center
201 Rep. John Lewis Way S, Nashville, TN 37203, USA

Sunday 19 May

14:00

Student Poster Session: SUPC

Poster Session | **Location:** MCC Exhibit Hall A, Country, 201 Rep. John Lewis Way S, Nashville, TN 37203, USA | **Convener:** Kiersten Ruisard

A study for emittance growth compensation by space charge effects at the injector of KEK-STF after dry ice cleaning of the RF gun

Speaker
Sayantan Mukherjee

Beam correction for multi-pass arcs in FFA@CEBAF: status update

Speaker
Alexander Coxe

Automated emittance and energy gain optimization for plasma wakefield acceleration

Speaker
Mason Stobbe

Towards operating low mean transverse energy alkali antimonide photocathodes at Argonne Cathode Test-stand

Speaker
Tariqul Hasan

Design, fabrication, and testing of a W-band corrugated waveguide for Wakefield acceleration

Speaker
Brendan Leung

Lattice design of a pulsed synchrotron for a muon collider fitting within the Fermilab site boundary

Speaker
Kyle Capobianco-Hogan

Dark current studies for a SW C-band electron gun with a deflector

Speaker
Jia Hao Tian

Optimization of nanostructured plasmas for laser wakefield acceleration using a Bayesian algorithm

Speaker
Juan Rodríguez Pérez

A new rf design of the two-mode transevers deflecting structure

Speaker
Yusen Guo

Study on high energy coupling efficiency of laser-electron interaction via vortex beam

Speaker
Xiazhen Xu

Magnetic field study for air-cored HTS skeleton cyclotron

Speaker
Tsun Him Chong

Various methods for computing dominant spin-orbit resonance strengths in storage rings

Speaker
Joseph Devlin

Design of prototype magnet for FETS-FFA

Speaker
Ta-Jen Kuo

Single-shot meV-resolution hard X-ray spectrograph for CBXFEL diagnostics

Speaker
Mr Keshab Kauchha

Dark current reduction for NSRRC photoinjector system by collimator

Speaker
Yang Jen Lin

Energy deposition and radiation level studies for the FCC-ee experimental insertions

Speaker
Alessandro Frasca

Simulating a rectilinear cooling channel using BDSIM for the 6D muon cooling demonstrator

Speaker
Rohan Kamath

Expanding the CERN ion injector chain capabilities: new beam dynamics simulation tools for future ion species

Speaker
Elias Waagaard

High fidelity numerical modelling and condition monitoring applied to septum magnets at CERN

Speaker
Krzysztof Kawa

The design of the proton-EDM injection line, from BNL AGS booster

Speaker
Jonathan Lee

Dynamic aperture of the RCS during bunch merges

Speaker
Daria Kuzovkova

An electron beam modulation laser for steady-state microbunching

Speaker
Xinyi Lu

Monte Carlo modeling of spin-polarized photoemission from NEA GaAs with low-temperature and strained-lattice effects

Speaker
John Callahan

BAGELS: A general method for minimizing the rate of radiative depolarization in electron storage rings

Speaker
Matthew Signorelli

Towards mitigation of challenges in development of high power ISOL targets

Speaker
Sundeep Ghosh

Numerical methods for emittance computation from luminosity

Speaker
Matteo Rufolo

Transfer learning for field emission mitigation in CEBAF SRF cavities

Speaker
Kawser Ahammed

Characterisation and optimisation of a C-band photo-injector for compact light sources

Speaker
Francesco Demurtas

Development of an S-band multi-beam acclearator for stationary CT application

Speaker
Mr Qingzhu Li

Experimental characterization of the timing-jitter effects on a beam-driven plasma wakefield accelerator

Speaker
Francesco Demurtas

Analyzing sudden beam loss in the SuperKEKB/Belle-II experiment with RFSoC technology

Speaker
Riku Nomaru

Crystal collimation for the HL-LHC upgrade using MERLIN++ accelerator physics library

Speaker
Raiza Babu

Multicell dielectric disk acceleraing structure high power experiment results

Speaker
Sarah Weatherly

First implementation of RF-KO slow extraction at COSY

Speaker
Philipp Niedermayer

Studies of space-charge compensation of positive ions by creating time-dependent secondary electrons in low-energy beam transport line

Speaker
Emre Cosgun

Picometer scale emittance from plasmonic spiral photocathode for particle accelerator applications

Speaker
Alimohammed Kachwala

ELISA: a compact linear accelerator for societal applications

Speaker
Eleonora Pasino

Beam dynamics study for a high-repetition-rate infrared terahertz FEL facility

Speaker
Yimin Yang

Energy dependence of PS main unit harmonics

Speaker
Vittorio Ferrentino

LHC 2023 ion optics commissioning

Speaker
Vittorio Ferrentino

Performance optimization design of photocathode injector based on multi-objective genetic algorithm

Speaker
Zheng Sun

The design of a 2.3-cell X-band photocathode RF electron gun

Speaker
Zixin Guo

Improvements to 4-rod RFQs with additive manufacturing processes

Speaker
Julius-Stephan Storch

A faster algorithm to compute lowest order longitudinal and transverse resistive wall wake for non-ultrarelativistic case

Speaker
Mr Jiazhen Tang

An ultimate single-ion source using a Coulomb crystal in a Paul trap

Speaker
Kento Muroo

An experimental proposal for the strong-filed Terahertz generation at SXFEL facility

Speaker
Kaiqing Zhang

Normalized uniformity-based common points layout optimization method for alignment installations

Speaker
Ting Ding

Generating tunable X-ray optical frequency combs using a free-electron laser

Speaker
Lanpeng Ni

Novel positron beam generation based on Shanghai Laser Electron Gamma Source

Speaker
Sheng Jin

Introducing a semi-Gaussian mixture model for simulating multiple coulomb scattering in RF-Track

Speaker
Bernd Stechauner

Searching for the best initial beam parameters for efficient muon ionization cooling

Speaker
Bernd Stechauner

Particles and photon attenuating behavior of lead free Eu3+ doped barium phosphate glass system

Speaker
Devendra Upadhyay

Development of new method of NEA Activation with Cs-Sb-O

Speaker
Yukiya Wakita

Measurements of beam correlations induced via coupled resonance crossing in the CERN PSB

Speaker
Elleanor Lamb

Luminosity effects due to dependent heavy-tailed beams

Speaker
Elleanor Lamb

Simulation of CXFEL with MITHRA code

Speaker
Elena Ros

Optimizations and updates of the FCC-ee collimation system

Speaker
Giacomo Broggi

Beam dynamics and injection condition in a ring-type dipole of a laser-accelerated electron beam for compact light sources

Speaker
Keonho Kim

Compact high average power THz source driven by thermionic RF gun

Speaker
Yining Yang

Study of the radiation field from multiple out-coupling holes in an infrared free electron laser oscillator

Speaker
Mengqi Xia

Instability of asymmetric electron drive beams in hollow plasma channels

Speaker
Rafael Yrjosmiel Legaspi

High gradient operation of cryogenic C-band RF photogun at UCLA

Speaker
Gerard Lawler

Simulation of electrom beams from the ELBE superconducting RF gun for ultrafast electron diffraction experiments

Speaker
Raffael Niemczyk

Optimization of bunch charge distribution for space charge emittance growth compensation in the PERLE injector

Speaker
Connor Monaghan

First FCC-ee lattice design with nested magnets

Speaker
Cristobal Miguel Garcia Jaimes

Optimization of ELSA electron beam transport for its inverse Compton scattering X-ray source

Speaker
Abel Pires

Demonstration of enhanced quantum efficiency from optical interference in alkali antimonide photocathodes

Speaker
Chad Pennington

Background mitigation concepts for Super-NaNu

Speaker
Florian Stummer

Preliminary design consideration for CEPC fast luminosity feedback system

Speaker
Meng Li

Electron cloud studies for DAΦNE collider and FCCee damping ring

Speaker
Senem Ozdemir

Optimization of cooling distribution of the EIC cooler ERL

Speaker
Ningdong Wang

Novel high-intensity X and Gamma-rays sources using crystals

Speaker
Riccardo Negrello

Characterization of FEL mirrors with long ROCs

Speaker
William Delooze

Experimental investigation of zero transverse force modes in sub-THz dielectric lined waveguide

Speaker
Cassandra Phillips

Commissioning of spectral diagnostics and future concepts for the PAX experiment at FACET-II

Speaker
Rafi Hessami

UV-Soft X-ray betatron radiation characterization from laser-plasma wakefield acceleration

Speaker
Daniele Francescone

Optimizations for ultrafast electron diffraction with a cryogenic C-band gun

Speaker
Chad Pennington

Framework for a multiphysics model of optical field emission from extended nanostructures

Speaker
Joshua Mann

Chemical robustness enhancement of negative electron affinity photocathodes through cesium-iodide deposition

Speaker
Samuel Levenson

Pulsed Compton Gamma-ray beam generation using pulsed FEL beam

Speaker
Stepan Mikhailov

High-energy and narrow-bandwidth X-ray regenerative amplifier FEL design for LCLS-II-HE

Speaker
Madison Singleton

Dark current in the LCLS Injector: characterization and mitigation strategies

Speaker
Sean Littleton

Linking edge-ML X-ray diagnostics and adaptable photoinjector laser shaping for leveraging the capabilities of LCLS-II

Speaker
Jack Hirschman

Evaluation of ultrafast THz near-fields for electron streaking

Speaker
Annika Gabriel

Simulating the transverse probing of laser-driven plasma wakefields using ultrarelativistic electrons

Speaker
Evan Trommer

Transport and dosimetry of laser-driven proton beams for radiobiology at the BELLA center

Speaker
Jared De Chant

Computational simulations and beamline optimizations for an electron beam degrader at CEBAF

Speaker
Victor Lizárraga-Rubio

Test of a metamaterial structure for structure-based wakefield acceleration

Speaker
Dillon Merenich

Application and comparative analysis of the APES_CBI module in BEPC-II experimental results

Speaker
Siyuan Feng

Optimization of laser coupling into optically field ionized plasma channels for laser-plasma acceleration

Speaker
Josh Stackhouse

Flat beam transport for a PWFA experiment at AWA

Speaker
Pratik Manwani

Comparison of flat beam PWFA analytic model with PIC simulations

Speaker
Pratik Manwani

Temporal profile shaping for a dispersive section using a multi-objective genetic algorithm

Speaker
Zheng Sun

Magnetic field modelling and symplectic integration of magnetic fields on curved reference frames for improved synchrotron design: first steps

Speaker
Silke Van der Schueren

Simulation of coupled space charge and wakefield effects for a prototype TW-gun at SwissFEL

Speaker
Jonas Christ

18:00

14:00

Student Poster Session: SUPG

Poster Session |
Location: MCC Exhibit Hall A, Bluegrass, 201 Rep. John Lewis Way S, Nashville, TN 37203, USA | **Convener:** Kiersten Ruisard

Effects of implantation temperature and annealing on structural evolution and migration of ruthenium in glassy carbon

Speaker
Tasabeeh Alabid Jafer

Comparison of WarpX and GUINEA-PIG for electron positron collisions

Speaker
Mr Bao Nguyen

Enhanced harmonic stability in magnet resonant power supplies via multi-harmonic closed-loop control and current feedforward

Speaker
Ran Li

Research on design of a novel permanent quadrupole magnet

Speaker
Shaoxiang Dong

Experimental design for validating the feasibility of in-situ plasma cleaning of normal conducting copper cavities

Speaker
Qianxu Xia

Study of the beam-beam interaction in an electron-positron collider with large Piwinski angle and crabbed waist

Speaker
Sangya Li

SRF cavity fault prediction using deep learning at Jefferson Lab

Speaker
Monibor Rahman

Generation of attosecond electron bunches through terahertz regulation

Speaker
Yian Wang

Decoupling of nitrogen and oxygen impurities in nitrogen doped SRF cavities

Speaker
Hannah Hu

Tracking study of the bimodal RF cavity for storage ring light source

Speaker
Dinghui Su

New design techniques on matching couplers for travelling wave accelerating structures

Speaker
Zexin Cao

A large momentum acceptance gantry for light-weight proton therapy facility: its beam lattice, magnets design and clinical advantages

Speaker
Yicheng Liao

Impact of octupoles on the Schottky spectra of bunched beams

Speaker
Christophe Lannoy

RF design of a C-band spherical pulse compressor for Super Tau-Charm linac

Speaker
Zexin Cao

SRF cavity instability detection with machine learning at CEBAF

Speaker
Hal Ferguson

Near-infrared noise in intense electron beams

Speaker
Sergei Kladov

Measurement of stability diagrams in the IOTA ring at Fermilab

Speaker
Mary Bossard

Study and simulation of cryogenic photonic-band-gap disk-loaded structure

Speaker
Dinghui Su

Fabrication and tuning of a 325 MHz ion-injector prototype for particle therapy facility

Speaker
Yusen Guo

Magnetron diagnostics with a novel optical fibre-Cherenkov detector

Speaker
Prof. Carsten Welsch

Exploring high gradient limit with cryogenic experiments at FREIA laboratory

Speaker
Mircea Coman

Bunch-by-bunch simulations of beam-beam driven particle losses in the LHC

Speaker
Philippe Belanger

Current status of MINIBEE: minibeam beamline for preclinical experiments on spatial fractionation in the FLASH regime

Speaker
Aikaterini Rousseti

AGS Booster model calibration and digital-twin development

Speaker
Weijian Lin

Multi-mode cavity design and characterization

Speaker
Mr Benjamin Sims

Characterization of meter-scale Bessel beams for plasma formation in a plasma wakefield accelerator

Speaker
Travis Nichols

Bayesian optimization scheme for the design of a nanofibrous high power target

Speaker
William Asztalos

Progress on pulsed electron beams for radiation effects characterization of electronics

Speaker
Atharva Kulkarni

Waveguide system for an SRF cryomodule in KEK

Speaker
Prakash Joshi

Topology optimization of a dipole magnet using normalized gaussian network

Speaker
Jie Li

Findings of simulation studies for the fast corrector magnets of PETRA IV

Speaker
Jan-Magnus Christmann

Emittance growth studies due to Crab Cavity induced amplitude noise in the SPS

Speaker
Andrea Fornara

Simulations of simultaneous measurement of GHz bunches using a fast kicker

Speaker
Xiao-Yang Zhang

Focusing of high-energy electron beam using silicon crystals for application in radiotherapy

Speaker
Marta Monikowska

Detailed simulation study of wakefield induced beam dynamics in the dielectric dechirper at CLARA

Speaker
Beatriz Higuera Gonzalez

Beam studies using a Cherenkov diffraction based beam position monitor for AWAKE

Speaker
Bethany Spear

Generation of symmetrical optical caustic beams for precise alignment

Speaker
Martin Dusek

PIP-II laser beam profile monitor laser system

Speaker
Parker Landon

Optimizing current density measurements for intense low beta electron beams

Speaker
Madison Howard

Modeling and optimization of the FACET-II injector with machine learning algorithms

Speaker
Sanjeev Chauhan

Mechanical design, structural requirements and optimization of the FCC e+e- interaction region components

Speaker
Francesco Fransesini

Novel materials for beam acceleration

Speaker
Sadie Seddon-Stettler

Comprehensive modeling of Siberian Snakes in BNL's AGS: symplectic tracking and optical compensation

Speaker
Eiad Hamwi

Proposal for a proton-bunch compression experiment at IOTA in the strong space-charge regime

Speaker
Benjamin Simons

Development of novel magnetically-focussed minibeams for in vivo and in vitro end stations for Laser-hybrid Accelerator for Radiobiological Applications

Speaker
Rehanah Razak

Unifying coherent synchrotron radiation wakefield and classical radiation reaction

Speaker
Zhuoyuan Liu

Real time crystal collimation monitoring at the CERN Large Hadron Collider

Speaker
Gianmarco Ricci

Dark current simulations in accelerating structures operating with short RF pulses

Speaker
Gaurab Rijal

Direct measurements of RHIC BPM data at the IP using linear regression

Speaker
William Fung

Measurement and modeling of beam transport in the FODO line of the Spallation Neutron Source Beam Test Facility

Speaker
Trent Thompson

Design of a 3-cell rectangular deflecting cavity for a compact THz-FEL

Speaker
Ruiying Luo

Research on spatial alignment of laser and electron beam in the generation of ultra-short electron pulses by laser modulation

Speaker
Jingya Li

Simulations of an electro-optical in-vacuum bunch profile monitor and measurements at KARA for use in the FCC-ee

Speaker
Micha Reissig

Devices and preparation methods for niobium coupon samples used to investigate high-Q mechanism

Speaker
Yue Zong

3D beam tracking studies including intrabeam scattering

Speaker
Alexander Engeda

Thermal diffusivity and acoustic properties of Nb thin films studied by time-domain thermoreflectance

Speaker
Md Obidul Islam

Minimizing space charge tune spread and increasing beam quality parameters with circular modes

Speaker
Onur Gilanliogullari

Status of coil-dominated discrete-cosine-theta quadrupole prototype for high rigidity isotope beams

Speaker
David Greene

Detailed characterization of coherent synchrotron radiation effects using generative phase space reconstruction

Speaker
Juan Pablo Gonzalez-Aguilera

Design of an X-band parallel-coupled travelling-wave accelerating structure for future linacs

Speaker
Zexin Cao

Simulation of beam loading compensation with RF-Track

Speaker
Javier Olivares Herrador

Superconducting thin films on higher order mode antennas to increase the CW performance of SRF cavities at MESA

Speaker
Paul Plattner

Buffered chemical polishing process for SHINE 3.9 GHz cavities

Speaker
Zheng Wang

Simulation study of nanosecond pulse power based on gyromagnetic nonlinear transmission line

Speaker
Wenbin Zhang

The gamma activation measurements at Shanghai Laser Electron Gamma Source

Speaker
Yuxuan Yang

Advancing non-linear space charge simulations: neural networks and analytical approaches

Speaker
Isabella Vojskovic

Implementing bunch-by-bunch diagnostics at the KARA booster synchrotron

Speaker
Marvin Noll

Investigating X-ray detector systems using Monte Carlo techniques

Speaker
Lauryn Eley

Real-time measurements of the RF-path of an electro-optical bunch arrival-time monitor with integrated planar pickup structure with low-charge electron beams at ELBE

Speaker
Mr Bernhard Scheible

Microscopic understanding of the effects of impurities in low RRR SRF cavities

Speaker
Katrina Howard

The FORTRESS beamline at Tsinghua university

Speaker
Peng Lv

Commissioning and experiments with a compact transverse deflecting system at FLUTE

Speaker
Matthias Nabinger

Gas jet-based beam profile monitor for the electron beam test stand at CERN

Speaker
Oliver Stringer

Second generation Cherenkov diffraction radiation studies at Diamond Light Source

Speaker
Alec Clapp

Magnetic measurements for Halbach-type permanent quadrupoles using a single-stretched wire system

Speaker
Davide Cuneo

Investigation of hot-spots due to local trapped flux in niobium superconducting radiofrequency cavities

Speaker
Bashu Khanal

Updates on the Cornell cryo-MTE-meter beamline

Speaker
Charles Zhang

Optimizing the sextupole configuration for simultaneous correction of third order resonances at the recycler ring

Speaker
Cristhian Gonzalez-Ortiz

Experimental study into the invasiveness of a gas jet beam profile monitor for charged particle beams

Speaker
Oliver Stringer

Discovering transient models of emittance growth via mode interaction of phase space nonuniformities

Speaker
Liam Pocher

The design of a rocket based RF electron accelerator for space applications

Speaker
Mr Christopher Roper

Analysis of laser engineered surface structures' roughness and surface impedance

Speaker
Patrick Krkotic

Bayesian optimization for beam centroid correction at ISAC

Speaker
Emma Ghelfi

Improvements of longitudinal stability with LLRF optimization at SIRIUS

Speaker
David Daminelli

Field emission assisted heating of Cs2Te photocathode: implication toward RF breakdown

Speaker
Ryo Shinohara

Automation upgrade of the CXLS photoinjector

Speaker
Taryn Brown

Dynamics study of the crab crossing at the electron ion collider using square matrix and iterative methods

Speaker
Kelly Anderson

Autofocusing accelerator beams

Speaker
Alexander Katrusiak

CXLS ionizing and laser radiation safety interlock systems

Speaker
Eric Everett

Measuring uniformity and gas density of gas sheet profile monitor for use with heavy-ion accelerators

Speaker
Aubrey Lokey

Slow longitudinal mode 1 instability in electron storage rings with harmonic cavities

Speaker
Murilo Alves

Parameters and process study of copper chamber coating with niobium thin films in DC and HIPIMS modes

Speaker
Jiawen Kan

SiPM integration testing for FACET-II pair spectrometer

Speaker
Jack Phillips

Mapping of an SRF electron gun focusing solenoid assembly

Speaker
Christopher Jones

A wireless method for beam coupling impedance bench measurement of resonant structures

Speaker
Chiara Antuono

Simulation studies of laser cooling for the Gamma Factory proof-of-principle experiment at the CERN SPS

Speaker
Peter Kruyt

Two slit emittance measurement with thermal emittance isolation for an SRF injector

Speaker
Mr Benjamin Sims

Beam tomography using MCMC

Speaker
Anthony Tran

18:00