

CPO-10 & ICAP'18 Joint Sessions

October 20 Sat

10/20 Sat		CPO-10 & ICAP'18 Joint		
9:00 10:45		Plenary Session, Grand Ballroom		Chair: Makino, Kyoko (MSU)
9:00	9:15	Makino, Kyoko	MSU	ICAP'18 Opening Remarks
9:15	9:45	(P) Qiang, Ji	LBNL	Advances in simulation of high brightness/high intensity beams
9:45	10:15	(P) Valishev, Alexander	FNAL	The FAST/IOTA project at Fermilab
10:15	10:45	(I) Wieland, Marco	Mapper Litho	Massively parallel charged particle optics enabled by MEMS fabrication techniques

10:45	Break
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10/20 Sat		CPO-10 & ICAP'18 Joint		
11:00 12:30		Plenary Session, Grand Ballroom		Chair: Wollnik, Hermann (New Mexico SU)
11:00	11:30	(I) Hornung, Christine	JLU Giessen	High-precision mass measurements with MR-TOF-MS
11:30	12:00	(I) Berg, Georg Peter	U Notre Dame	The ion-optical design of the high rigidity spectrometer HRS for FRIB
12:00	12:30	(I) Kazantseva, Erika	TU Darmstadt	High-order aberrations of large aperture magnets and applications to the Super-FRS project at GSI

12:30	CPO-10 & ICAP'18 Joint Group Photos	Weather permitting
	Lunch	

10/20 Sat		CPO-10 & ICAP'18 Joint		
14:00 15:45		Session 1, Grand Ballroom		Chair: Valishev, Alexander (FNAL)
14:00	14:30	(I) Erdelyi, Bela	NIU	Normal form approach to and nonlinear optics analysis of the IOTA ring
14:30	14:45	Boine-Frankenheim, Oliver	GSI	Beam dynamics simulations and challenges for the FAIR SIS100 synchrotron
14:45	15:00	Venturini, Marco	LBNL	Mode-analysis methods for the study of collective instabilities in electron-storage rings
15:00	15:15	Kramer, Patrick	CERN	HOM mitigation for future SPS 33-cell 200 MHz accelerating structures

10/20 Sat		CPO-10 & ICAP'18 Joint		
14:00 15:45		Session 2, Fiesta Key		Chair: Snopok, Pavel (IIT)
14:00	14:30	(I) Li, Yongjun	BNL	Genetic algorithm enhanced by machine learning for dynamic aperture optimization
14:30	15:00	(I) Appel, Sabrina	GSI	Optimization of heavy-ion synchrotrons using evolutionary algorithms and machine learning
15:00	15:15	Neveu, Nicole	IIT	Comparison of model based and heuristic optimization algorithms applied to photoinjectors using libEnsemble
15:15	15:30	Jensen, Aaron	Leidos	Single objective genetic optimization of an 85% efficient klystron
15:30	15:45	Hesam M. Nezhad, Neda	TU Delft	Multi-electrode lens system optimization using genetic algorithms

16:00	Open Bar, Casa Marina Beach
17:00	Banquet, Casa Marina Beach

CPO-10 & ICAP'18 Joint Sessions

October 21 Sun

10/21 Sun CPO-10 & ICAP'18 Joint

9:00	10:30	Session 1, Grand Ballroom		Chair: Kruit, Pieter (TU Delft)
9:00	9:30	(I) Metral, Elias	CERN	Space charge and transverse instabilities at the CERN SPS and LHC
9:30	10:00	(I) Zhang, He	JLab	Fast multipole methods for multiparticle simulations
10:00	10:15	Stopka, Jan	ISI CAS	Statistical Coulomb Interactions in multi-beam SEM
10:15	10:30	Russenschuck, Stephan	CERN	Challenges in extracting pseudo-multipoles from magnetic measurements

10/21 Sun CPO-10 & ICAP'18 Joint

9:00	10:30	Session 2, Fiesta Key		Chair: Van de Walle, Jarno (IBA)
9:00	9:30	(I) Huggins, Anthony	HHU Düsseldorf	Design and simulation of high momentum acceptance gantries for ion beam therapy
9:30	9:45	Liu, Xu	Huazhong UST	Beam alignment simulation on the beamline of a proton therapy facility
9:45	10:00	Trbojevic, Dejan	BNL	Optical design of the fixed field permanent magnet gantry for the proton cancer therapy
10:00	10:15	Nesteruk, Konrad P.	PSI	Large momentum acceptance beam optics of a superconducting gantry for proton therapy
10:15	10:30	Hernalsteens, Cedric	IBA	Optimization of hadron therapy beamlines using a novel fast tracking code for beam transport and beam-matter interactions

10:30	Break			
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10/21 Sun CPO-10 & ICAP'18 Joint

11:00	12:15	Plenary Session, Grand Ballroom		Chair: Berz, Martin (MSU)
11:00	11:30	(P) Ryne, Robert D	LBNL	Computational accelerator physics: On the road to exascale
11:30	12:00	(I) Tromp, Rudolf	IBM	Computation and measurement of aberrations for aberration corrected electron microscopy
12:00	12:15	Berz, Martin	MSU	Closing of CPO-10

12:15	Lunch			
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ICAP'18

October 21 Sun

10/21 Sun

14:00	15:30	Session 1, Grand Ballroom		Chair: Russenschuck, Stephan (CERN)
14:00	14:30	(I) Mayes, Christopher	SLAC	Lightsource unified modeling environment (LUME), a start-to-end simulation framework for electrons and photons
14:30	14:45	Rosenthal, Marcel	CERN	Optimization studies for the K12 beam Line at the CERN North Area
14:45	15:00	Luo, Yun	BNL	Simulation challenges for eRHIC beam-beam study
15:00	15:15	Wang, Dong	ShanghaiTech U	SHINE: Shanghai high rep-rate XFEL and extreme light facility
15:15	15:30	Boine-Frankenheim, Oliver	GSI	Beam stability estimates and simulation studies for the Future Circular Collider (FCC-hh)

10/21 Sun

14:00	15:30	Session 2, Fiesta Key		Chair: Van Rienen, Ursula (U Rostock)
14:00	14:30	(I) Planche, Thomas	TRIUMF	Symplectic particle-in-cell
14:30	14:45	Buescher, Markus	FZ Jülich	Polarized proton beams from laser-induced plasmas
14:45	15:00	Ma, Jun	BNL	Simulations of coherent electron cooling with free electron laser amplifier and plasma-cascade micro-bunching amplifier
15:00	15:15	Cook, Nathan	Radiasoft	High fidelity three-dimensional simulations of thermionic energy converters
15:15	15:30	Orozco, Eduardo A.	UI Santander	Particle-in-cell simulation of a bunched electrons beam acceleration in a TE113 cylindrical cavity affected by a static inhomogeneous magnetic field

15:30	Coffee		
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10/21 Sun

16:00	17:30	Session 1, Grand Ballroom		Chair: Boiné-Frankenheim, Oliver (GSI)
16:00	16:30	(I) Ratner, Daniel	SLAC	Machine learning for X-ray Free-electron lasers
16:30	16:45	Van de Walle, Jarno	IBA	Beam dynamics simulations of medical cyclotrons and beam transfer lines at IBA
16:45	17:00	Han, Wenjie	Huazhong UST	Design study of a fast kicker magnet applied to the beamline of a proton therapy facility
17:00	17:15	Tesse, Robin	U Libre Bruxelles	Seamless beam and radiation transport simulations of IBA Proteus systems using BDSIM
17:15	17:30	Alimohamadi, Masoud	Farhangian U	Quantum statistical properties of free electron laser with a planar wiggler and ion-channel guiding

10/21 Sun

16:00	16:45	Session 2, Fiesta Key		Chair: Van Rienen, Ursula (U Rostock)
16:00	16:15	Zhang, Zhouli	U Tennessee	Generation of particle distributions at RFQ exit at SNS beam test facility
16:15	16:30	Frey, Matthias	PSI	Computer architecture Independent adaptive geometric multigrid Solver for AMR-PIC
16:30	16:45	Edelen, Auralee	SLAC	Surrogate models for beam dynamics in charged particle accelerators

ICAP'18

October 22 Mon

10/22 Mon

9:00	10:30	Plenary Session, Grand Ballroom		Chair: Qiang, Ji (LBNL)
9:00	9:30	(P) Niedemayer, Uwe	TU Darmstadt	Challenges in simulating beam dynamics of dielectric laser acceleration
9:30	10:00	(P) Gjonaj, Erion	TU Darmstadt	Recent developments in wake field and beam dynamics computation
10:00	10:30	(P) Heinemann, Klaus	U New Mexico	Spin dynamics in modern electron storage rings: computational and theoretical aspects

10:30	Break			
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10/22 Mon

11:00	12:00	Session 1, Grand Ballroom		Chair: Van Rienen, Ursula (U Rostock)
11:00	11:30	(I) Marocchino, Alberto	INFN	Plasma wakefield start to end acceleration simulations, from photocathode to FEL with simulated density profiles
11:30	11:45	Massimo, Francesco	LLR - CNRS	Efficient modeling of laser wakefield acceleration through the PIC code Smilei in CILEX project
11:45	12:00	Bizzozero, David	TU Darmstadt	Exploring the validity of the paraxial approximation for coherent synchrotron radiation wake fields

10/22 Mon

11:00	12:15	Session 2, Fiesta Key		Chair: Ryne, Robert D (LBNL)
11:00	11:15	Syphers, Michael	NIU	Muon g-2: An interplay of beam dynamics and HEP
11:15	11:30	Tarazona, David	MSU	Realistic modeling of the Muon g-2 Experiment Beamlines at Fermilab
11:30	11:45	Meot, Francois	BNL	Polarization lifetime in an electron storage ring, an ergodic approach in eRHIC EIC
11:45	12:00	Beznosov, Oleksii	U New Mexico	Spin dynamics in modern electron storage rings: Computational aspects
12:00	12:15	Ranjbar, Vahid	BNL	Approaches to optimizing spin transmission in lattice design

13:00	Excursion			
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ICAP'18

October 23 Tue

10/23 Tue

9:00	10:30	Session 1, Grand Ballroom		Chair: Makino, Kyoko (MSU)
9:00	9:30	(I) Flisgen, Thomas	Helmholtz Berlin	Computation of eigenmodes in long and complex accelerating structures by means of concatenation strategies
9:30	9:45	Van Rienen, Ursula	U Rostock	A new finite element solver for MOEVE PIC Tracking
9:45	10:00	De Gersem, Herbert	TU Darmstadt	High-precision lossy eigenfield analysis based on the finite element method
10:00	10:15	Lunin, Andrei	FNAL	Statistical analysis of the eigenmode spectrum in the SRF cavities with mechanical imperfections
10:15	10:30	Frey, Matthias	PSI	Trimcoil optimization using multi-objective optimization techniques and HPC

10/23 Tue

9:00	10:30	Session 2, Fiesta Key		Chair: Russenschuck, Stephan (CERN)
9:00	9:15	Deniau, Laurent	CERN	Upgrade of MAD-X for HL-LHC project and FCC studies
9:15	9:30	De Maria, Riccardo	CERN	SixTrack project: status, running environment and new developments
9:30	9:45	Shishlo, Andrei	ORNL	Update on the status of Linac part of the PyORBIT code
9:45	10:00	Abell, Dan T.	Radiasoft	Zgoubi: Recent developments and future plans
10:00	10:15	Xiao, Liling	SLAC	Advances in accelerator modeling with parallel multi-physics code suite ACE3P
10:15	10:30	Repond, Joel	CERN	Simulations of longitudinal beam stability in the CERN SPS with BLD

10:30	Break		
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10/23 Tue

11:00	12:30	Session 1, Grand Ballroom		Chair: Ryne, Robert D (LBNL)
11:00	11:30	(I) Van Beeumen, Roel	LBNL	Parallel algorithms for solving nonlinear eigenvalue problems in accelerator cavity simulations
11:30	12:00	(I) Pommerenke, Hermann	U Rostock	Efficient computation of lossy higher order modes in complex SRF cavities using reduced order models and nonlinear eigenvalue problem algorithms
12:00	12:15	De Gersem, Herbert	TU Darmstadt	Uncertainty quantification for the fundamental mode spectrum of the European XFEL Cavities
12:15	12:30	Fedurin, Mikhail	BNL	Electron beam longitudinal phase space restoration from the image after beam pass deflector cavity and spectrometer arm

10/23 Tue

11:00	12:30	Session 2, Fiesta Key		Chair: Russenschuck, Stephan (CERN)
11:00	11:30	(I) Adelman, Andreas	PSI	Recent developments of the open source Code OPAL
11:30	11:45	Meot, Francois	BNL	A full field-map modeling of Cornell-BNL CBETA 4-Pass energy recovery Linac
11:45	12:00	Trbojevic, Dejan	BNL	Multi pass ERL design with a single fixed field magnet return line
12:00	12:15	Gulliford, Colwyn	Cornell U	Experience with CBETA online modeling tools
12:15	12:30	Johnstone, Carol	Part Acc Corp	Advanced design and simulation of fixed-field accelerators

12:30	ICAP'18 only Group Photos		Weather permitting
	Lunch		

ICAP'18

October 23 Tue

10/23 Tue

14:00	15:30	Session 1, Grand Ballroom		Chair: De Gersem, Herbert (TU Darmstadt)
14:00	14:30	(I) Ruisard, Kiersten	ORNL	Nonlinear optics at UMER
14:30	14:45	Levinsen, Yngve	ESS	ESS accelerator lattice design studies and automatic synoptic deployment
14:45	15:00	Aleksandrov, Alexander	ORNL	SNS beam test facility for experimental benchmarking of high intensity beam dynamics computer simulation
15:00	15:15	Jung, Paul M.	TRIUMF	S-based multi-particle spectral simulation of an electron gun
15:15	15:30	Kranjcevic, Marija	ETH Zürich	Constrained multi-objective shape optimization of superconducting RF cavities to counteract dangerous higher order modes

10/23 Tue

14:00	15:30	Session 2, Fiesta Key		Chair: Boine-Frankenheim, Oliver (GSI)
14:00	14:30	(I) Bassi, Gabriele	BNL	Self-consistent simulations of short- and long-range wakefield effects in storage rings
14:30	14:45	Tsoupas, Nicholas	BNL	Calculation of the AGS optics based on 3D fields derived from experimentally measured field maps on the median plane
14:45	15:00	Volz, Paul	Helmholtz Berlin	Analytical calculations for Thomson-backscattering based-light sources
15:00	15:15	Walker, Stuart	Royal Holloway	A holistic approach to simulating beam losses in the Large Hadron Collider using BDSIM
15:15	15:30	Iwasaki, Yoshitaka	SAGA Light Source	Analysis of the beam loss mechanism during the energy ramp-up at the SAGA-LS

15:30	Coffee		
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10/23 Tue

16:00	17:30	Session 1, Grand Ballroom		Chair: De Gersem, Herbert (TU Darmstadt)
16:00	16:30	(P) Ostroumov, Peter	FRIB/MSU	Computational beam dynamics requirements for FRIB
16:30	16:45	Hidas, Dean Andrew	BNL	Novel, fast, open-source code for synchrotron radiation computation on arbitrary 3D geometries
16:45	17:00	Nash, Boaz	Radiasoft	Beamline map computation for paraxial optics
17:00	17:15	Valetov, Eremey V.	MSU	Main and fringe field computations for the electrostatic quadrupoles of the muon g-2 experiment storage ring
17:15	17:30	Otero Olarte, Oswaldo	UI Santander	Study of electron cyclotron resonance acceleration by cylindrical TE011 mode

10/23 Tue

16:00	17:45	Session 2, Fiesta Key		Chair: Boine-Frankenheim, Oliver (GSI)
16:00	16:30	(I) Hwang, Kilean	LBNL	FEL simulation using the Lie method
16:30	16:45	Krasilnikov, Mikhail	DESY	Start-to-end simulations of THz SASE FEL proof-of-principle experiment at PITZ
16:45	17:00	Liu, Ao	Euclid Techlabs	pyaopt optimization suite and its application on Astra-simulated SRF MeV gun design for UEMs
17:00	17:15	Zerbe, Brandon	MSU	Mean-field density evolution of bunched particles with non-zero initial velocity
17:15	17:45	(I) Cerfon, Antoine	New York U	Sparse grids particle in cell scheme for noise reduction in beam simulations

17:00	19:00	Reception		
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ICAP'18

October 24 Wed

10/24 Wed

9:00	09:45	Session 2, Fiesta Key		Chair: Ryne, Robert D (LBNL)
9:00	9:15	Massimo, Francesco	LLR - CNRS	Design of a compact permanent magnet spectrometer for CILEX/APOLLON
9:15	9:30	Han, Baoxi	ORNL	Simulations of beam chopping for potential upgrade of the SNS LEBT chopper
9:30	9:45	Plastun, Alexander	FRIB/MSU	Longitudinal beam dynamics in FRIB and ReA Linacs

10/24 Wed

9:00	10:45	Session 1 & Plenary Session, Grand Ballroom		Chair: Makino, Kyoko (MSU)
9:00	9:15	Mitchell, Chad	LBNL	Analysis of emittance growth due to collisional particle noise in a gridless spectral Poisson solver for fully symplectic multiparticle tracking
9:15	9:30	Schmid, Steffen Alexander	TU Darmstadt	REPTIL - A relativistic 3D space charge particle tracking code based on the fast multipole method
9:30	10:00	(I) Webb, Stephen	Radiasoft	Theoretical and computational modeling of a plasma wakefield BBU instability
10:00	10:30	(I) Lehe, Remi	LBNL	Review of spectral Maxwell solvers for electromagnetic particle-in-cell: algorithms and advantages
10:30	10:45	Makino, Kyoko	MSU	Closing of ICAP'18