

Machine Learning Applications for Particle Accelerators

Report of Contributions

Contribution ID: 0

Type: **not specified**

Welcome

Wednesday, 28 February 2018 09:00 (20 minutes)

Presenter: Prof. RAUBENHEIMER, Tor (SLAC)

Contribution ID: 1

Type: **not specified**

Facility needs: Hadron Synchrotrons: Operational challenges at the LHC

Wednesday, 28 February 2018 09:20 (20 minutes)

Presenter: FUCHSBERGER, Kajetan (CERN)

Session Classification: Facility needs

Contribution ID: 2

Type: **not specified**

Facility needs: XFELs

Wednesday, 28 February 2018 09:40 (20 minutes)

Presenter: KAMMERING, Raimund (DESY)

Session Classification: Facility needs

Contribution ID: 3

Type: **not specified**

Facility needs: Synchrotrons

Wednesday, 28 February 2018 10:00 (20 minutes)

Presenter: HUANG, Xiaobiao

Session Classification: Facility needs

Contribution ID: 4

Type: **not specified**

Fault detection and alarm systems for the CERN Technical Infrastructure

Wednesday, 28 February 2018 10:50 (20 minutes)

Presenter: NIELSEN, Jesper (CERN)

Session Classification: Facility needs

Contribution ID: 5

Type: **not specified**

Facility needs - or chances - seen from the other side

Wednesday, 28 February 2018 11:10 (20 minutes)

Presenter: CANDEL, Arno

Session Classification: Facility needs

Contribution ID: 6

Type: **not specified**

Discussion

Wednesday, 28 February 2018 11:30 (30 minutes)

Presenter: LI, Kevin

Session Classification: Facility needs

Contribution ID: 7

Type: **not specified**

Experience with FEL taper tuning using reinforcement learning and clustering

Wednesday, 28 February 2018 13:00 (20 minutes)

Presenter: Dr WU, Juhao

Session Classification: Tuning

Contribution ID: 8

Type: **not specified**

Introduction to Bayesian Optimization

Wednesday, 28 February 2018 13:20 (20 minutes)

Presenter: KIRSCHNER, Johannes

Session Classification: Tuning

Contribution ID: 9

Type: **not specified**

Experience at SLAC with Bayesian Optimization using Gaussian Processes

Wednesday, 28 February 2018 13:40 (20 minutes)

Presenter: DURIS, Jopseph

Session Classification: Tuning

Contribution ID: **10**

Type: **not specified**

ML Tuning discussion

Contribution ID: **11**

Type: **not specified**

Poster Blitz

Wednesday, 28 February 2018 14:00 (20 minutes)

Session Classification: Tuning

Contribution ID: 12

Type: **not specified**

General experience with online optimization

Wednesday, 28 February 2018 16:00 (20 minutes)

Presenters: SCHEINKER, Alexander; ALEX, Scheinker

Session Classification: Tuning

Contribution ID: 13

Type: **not specified**

Sloppy and Genetic Algorithms for Low-Emittance Tuning at CESR

Wednesday, 28 February 2018 16:20 (20 minutes)

Presenter: BAZAROV, Ivan

Session Classification: Tuning

Contribution ID: 14

Type: **not specified**

Discussion: Tuning

Wednesday, 28 February 2018 16:40 (40 minutes)

Presenter: EDELEN, Auralee (CSU)

Session Classification: Tuning

Contribution ID: 15

Type: **not specified**

Experience with tuning at XFEL

Wednesday, 28 February 2018 15:20 (20 minutes)

Presenter: TOMIN, Sergey

Session Classification: Tuning

Contribution ID: 16

Type: **not specified**

Experience with Model Predictive Control and Model-based Reinforcement Learning using Neural Networks

Thursday, 1 March 2018 09:00 (20 minutes)

Presenter: EDELEN, Auralee

Session Classification: Simulations and Modeling

Contribution ID: 17

Type: **not specified**

Forecasting of Beam Interlocks in High Intensity (Hadron) Accelerators

Thursday, 1 March 2018 09:20 (20 minutes)

Presenter: ADELMANN, Andreas

Session Classification: Simulations and Modeling

Contribution ID: **18**

Type: **not specified**

Light Source Simulations

Thursday, 1 March 2018 09:40 (20 minutes)

Presenter: AGAPOV, Ilya (DESY)

Session Classification: Simulations and Modeling

Contribution ID: 19

Type: **not specified**

Neural Network Modeling and Virtual Diagnostics at FAST

Thursday, 1 March 2018 11:00 (20 minutes)

Presenter: EDELEN, Jonathan

Session Classification: Simulations and Modeling

Contribution ID: 20

Type: **not specified**

GANs for Simulation in HEP

Thursday, 1 March 2018 11:20 (20 minutes)

Presenter: DE OLIVEIRA, Luke

Session Classification: Simulations and Modeling

Contribution ID: **21**

Type: **not specified**

Discussion

Thursday, 1 March 2018 11:40 (20 minutes)

Presenter: AGAPOV, Ilya (DESY)

Session Classification: Simulations and Modeling

Contribution ID: 22

Type: **not specified**

Machine learning for anomaly detection in large distributed accelerator systems

Thursday, 1 March 2018 13:00 (20 minutes)

Presenter: VAN TRAPPEN, Pieter

Session Classification: Prognosics

Contribution ID: 23

Type: **not specified**

Beam loss plane recognition for the LHC

Thursday, 1 March 2018 13:20 (20 minutes)

Presenter: VALENTINO, Gianluca

Session Classification: Prognosics

Contribution ID: 24

Type: **not specified**

Detection of bad BPMs

Thursday, 1 March 2018 13:40 (20 minutes)

Presenter: FOL, Elena

Session Classification: Prognosics

Contribution ID: 25

Type: **not specified**

Discussion

Thursday, 1 March 2018 14:00 (30 minutes)

Session Classification: Prognosics

Contribution ID: 26

Type: **not specified**

Machine learning application on the investigation of the micro-bunching instability at storage rings

Friday, 2 March 2018 09:00 (20 minutes)

Presenter: Mr BOLTZ, Tobias (KIT)

Session Classification: Data Analysis

Contribution ID: 27

Type: **not specified**

Non-parametric Density Estimators for the Measurements of Ionization Cooling

Friday, 2 March 2018 09:20 (20 minutes)

Presenter: MOHAYAI, Tanaz Angelina (Illinois Institute of Technology)

Session Classification: Data Analysis

Contribution ID: 28

Type: **not specified**

Data mining at HIPA

Friday, 2 March 2018 09:40 (20 minutes)

Presenter: Mr SNUVERINK, Jochem (Paul Scherrer Institute)

Session Classification: Data Analysis

Contribution ID: **29**

Type: **not specified**

Summary

Friday, 2 March 2018 11:00 (1 hour)

Presenters: EDELEN, Auralee (CSU); BOWRING, Daniel (Fermilab); AGAPOV, Ilya (DESY); LI, Kevin (CERN); Dr ISCHEBECK, Rasmus (PSI)

Contribution ID: **30**

Type: **not specified**

Whitepaper and Collaboration planning

Friday, 2 March 2018 13:30 (1h 30m)

Presenter: Dr MAYES, Christopher (SLAC National Accelerator Laboratory)

Contribution ID: 31

Type: **not specified**

Experience with tuning at FERMI@Elettra

Wednesday, 28 February 2018 15:40 (20 minutes)

Presenter: GAIO, Giulio (FERMI@Elettra)

Session Classification: Tuning

Contribution ID: 32

Type: **not specified**

Logistic Regression, Neural Networks

Tuesday, 27 February 2018 09:00 (1h 30m)

Session Classification: ML Tutorial

Contribution ID: 33

Type: **not specified**

Unsupervised Learning (Clustering), Toy Optics model

Tuesday, 27 February 2018 13:00 (1h 30m)

Session Classification: ML Tutorial

Contribution ID: **34**

Type: **not specified**

Neural Networks

Tuesday, 27 February 2018 11:00 (1 hour)

Session Classification: ML Tutorial