

AF6 September Workshop

Report of Contributions

Contribution ID: 1

Type: **not specified**

251: Electron Beam Driven Plasma Wakefield Acceleration (PWFA)

Thursday, 24 September 2020 08:35 (10 minutes)

Presenter: Prof. JOSHI, Chan (UCLA)

Session Classification: Wakefield Acceleration

Contribution ID: 2

Type: **not specified**

68: Proton driven PWFA for HEP applications

Thursday, 24 September 2020 08:45 (5 minutes)

Presenter: Dr MUGGLI, Patric (MPP)

Session Classification: Wakefield Acceleration

Contribution ID: 3

Type: **not specified**

197: Near-term R&D at BELLA towards a laser-plasma-based collider

Thursday, 24 September 2020 08:50 (5 minutes)

Presenter: Dr GONSALVES, Tony (LBL)

Session Classification: Wakefield Acceleration

Contribution ID: 4

Type: **not specified**

198: Plasma sources for laser plasma accelerators

Thursday, 24 September 2020 08:55 (5 minutes)

Presenter: Dr GONSALVES, Tony (LBL)

Session Classification: Wakefield Acceleration

Contribution ID: 5

Type: **not specified**

42: SWFA demonstrators with integrated technologies for future largescale machines

Thursday, 24 September 2020 09:00 (5 minutes)

Presenter: Dr SHAO, Jiahang (ANL)

Session Classification: Wakefield Acceleration

Contribution ID: 6

Type: **not specified**

44: Short-pulse wakefield structure R&D for high gradient and high efficiency acceleration in future large-scale machines

Thursday, 24 September 2020 09:05 (5 minutes)

Presenter: Dr SHAO, Jiahang (ANL)

Session Classification: Wakefield Acceleration

Contribution ID: 7

Type: **not specified**

90: Structure Wakefield Acceleration (SWFA) Development for an Energy Frontier Machine

Thursday, 24 September 2020 09:10 (5 minutes)

Presenter: Dr JING, Chunguang (ANL)

Session Classification: Wakefield Acceleration

Contribution ID: **8**

Type: **not specified**

Discussion

Thursday, 24 September 2020 09:15 (30 minutes)

Session Classification: Wakefield Acceleration

Contribution ID: 9

Type: **not specified**

221: High average power ultrafast laser technologies for driving future advanced accelerators

Thursday, 24 September 2020 10:45 (10 minutes)

Presenter: Dr KIANI, Leily (LLNL)

Session Classification: Laser Drivers

Contribution ID: **10**

Type: **not specified**

77: Spatiotemporal Control of Laser Intensity for High Performance Plasmabased accelerators

Thursday, 24 September 2020 10:55 (5 minutes)

Presenter: Dr PALASTRO, John (University of Rochester)

Session Classification: Laser Drivers

Contribution ID: 11

Type: **not specified**

124: High average power femtosecond laser driver for plasma accelerators by compression of spectrally broadened high energy Yb:YAG lasers

Thursday, 24 September 2020 11:00 (5 minutes)

Presenter: Prof. ROCCA, Jorge (Colorado State University)

Session Classification: Laser Drivers

Contribution ID: 12

Type: **not specified**

Discussion

Thursday, 24 September 2020 11:05 (10 minutes)

Session Classification: Laser Drivers

Contribution ID: 13

Type: **not specified**

96: GARD Beam Test Facilities

Thursday, 24 September 2020 12:30 (10 minutes)

Presenter: YAKIMENKO, vitya (slac)

Session Classification: Test Facilities & Community

Contribution ID: 14

Type: **not specified**

141: EuPRAXIA – A Concept for a Research Infrastructure based on Plasma Accelerators and First user Applications

Thursday, 24 September 2020 12:40 (10 minutes)

Presenter: Dr FERRARIO, Massimo (INFN)

Session Classification: Test Facilities & Community

Contribution ID: 15

Type: **not specified**

248: Plasma Accelerator Science Community Organization

Thursday, 24 September 2020 12:50 (5 minutes)

Presenter: Prof. THOMAS, Alec (University of Michigan)

Session Classification: Test Facilities & Community

Contribution ID: 16

Type: **not specified**

156: Exploiting Global Accelerator Network Synergies

Thursday, 24 September 2020 13:15 (5 minutes)

Session Classification: Test Facilities & Community

Contribution ID: 17

Type: **not specified**

214: Laser-Plasma Accelerator Development at the BELLA Center

Thursday, 24 September 2020 12:55 (5 minutes)

Presenter: Dr ESAREY, Eric (LBL)

Session Classification: Test Facilities & Community

Contribution ID: 18

Type: **not specified**

176: Development of LWIR-based Advanced Acceleration Technology to Serve the Next Generation of Colliders

Thursday, 24 September 2020 13:00 (5 minutes)

Presenter: Prof. VAF AEI-NAJAFABADI, Navid (Stony Brook University)

Session Classification: Test Facilities & Community

Contribution ID: 19

Type: **not specified**

154: The ZEUS high intensity laser user facility for research into laser driven particle acceleration

Thursday, 24 September 2020 13:05 (5 minutes)

Presenter: Prof. KRUSHELNICK, Karl (University of Michigan)

Session Classification: Test Facilities & Community

Contribution ID: 20

Type: **not specified**

43: Research and Educational Opportunities at the Argonne Wakefield Accelerator (AWA) Facility

Thursday, 24 September 2020 13:10 (5 minutes)

Presenter: POWER, John (Argonne National Lab)

Session Classification: Test Facilities & Community

Contribution ID: **21**

Type: **not specified**

Discussion

Thursday, 24 September 2020 13:20 (25 minutes)

Session Classification: Test Facilities & Community

Contribution ID: 22

Type: **not specified**

49: Dielectric Laser Acceleration

Wednesday, 23 September 2020 11:00 (10 minutes)

Presenter: ENGLAND, Joel (SLAC)

Session Classification: New Acceleration Concepts

Contribution ID: 23

Type: **not specified**

5: Ultimate Acceleration in Crystals and Nanostructures

Wednesday, 23 September 2020 11:10 (5 minutes)

Session Classification: New Acceleration Concepts

Contribution ID: 24

Type: **not specified**

6: Nanostructure Accelerators : Novel concept and path to its realization

Wednesday, 23 September 2020 11:15 (5 minutes)

Presenter: SAHAI, Aakash (University of Colorado)

Session Classification: New Acceleration Concepts

Contribution ID: 25

Type: **not specified**

78: Photonic Crystal (PhC)-based Dielectric Laser Accelerator

Wednesday, 23 September 2020 11:20 (5 minutes)

Session Classification: New Acceleration Concepts

Contribution ID: 26

Type: **not specified**

127: High-Gradient Accelerators at THz Frequencies

Wednesday, 23 September 2020 11:30 (5 minutes)

Presenter: NANNI, Emilio (SLAC National Accelerator Laboratory)

Session Classification: New Acceleration Concepts

Contribution ID: 27

Type: **not specified**

196: Laser-driven acceleration mediated by metallic nanostructures

Wednesday, 23 September 2020 11:25 (5 minutes)

Presenter: FILIPPETTO, Daniele (Lawrence Berkeley National Lab)

Session Classification: New Acceleration Concepts

Contribution ID: 28

Type: **not specified**

218: Computational modeling needs of plasma-based accelerators towards future colliders; 82: Consortium for PIC Software in Accelerator Science

Wednesday, 23 September 2020 12:00 (10 minutes)

Presenter: Prof. MORI, Warren (UCLA)

Session Classification: Computation & Control

Contribution ID: 29

Type: **not specified**

99: Modeling of structured plasmas for next generation accelerators

Wednesday, 23 September 2020 12:10 (5 minutes)

Presenter: COOK, Nathan (RadiaSoft)

Session Classification: Computation & Control

Contribution ID: **30**

Type: **not specified**

165: Machine Learning Meets the Challenges of HEP Research and Development

Wednesday, 23 September 2020 12:15 (5 minutes)

Presenter: O'SHEA, Brendan (SLAC National Laboratory)

Session Classification: Computation & Control

Contribution ID: 31

Type: **not specified**

197: Adaptive control systems, precision RF and machine learning for accelerators; 208: High precision RF control for next generation accelerator; 75 Machine learning and surrogate models for simulation-based optimization of accelerator design

Wednesday, 23 September 2020 12:20 (5 minutes)

Session Classification: Computation & Control

Contribution ID: 32

Type: **not specified**

131: Comprehensive Single-shot Diagnostics for Quantifying LWFA Beam Quality

Wednesday, 23 September 2020 12:25 (5 minutes)

Presenter: LUMPKIN, Alex (Fermilab)

Session Classification: Computation & Control

Contribution ID: **33**

Type: **not specified**

Discussion

Wednesday, 23 September 2020 11:35 (25 minutes)

Session Classification: New Acceleration Concepts

Contribution ID: **34**

Type: **not specified**

Discussion

Wednesday, 23 September 2020 12:30 (30 minutes)

Session Classification: Computation & Control

Contribution ID: 35

Type: **not specified**

11: Underdense Thin Plasma Lens as a Tool for Future Colliders

Thursday, 24 September 2020 09:45 (5 minutes)

Session Classification: Beam Manipulation

Contribution ID: **36**

Type: **not specified**

196: Active plasma lenses

Thursday, 24 September 2020 09:50 (5 minutes)

Session Classification: Beam Manipulation

Contribution ID: 37

Type: **not specified**

76: Hybrid LWFA-PWFA staging as a beam energy and brightness transformer

Thursday, 24 September 2020 09:55 (5 minutes)

Session Classification: Beam Manipulation

Contribution ID: **38**

Type: **not specified**

234: Bright Electron and Positron Beams and High-Charge Electron Bunches for Beam-driven Structure-WakeField Accelerators;

Thursday, 24 September 2020 10:00 (5 minutes)

Session Classification: Beam Manipulation

Contribution ID: 39

Type: **not specified**

200: Compact photon sources based on laser-plasma accelerators

Thursday, 24 September 2020 11:15 (10 minutes)

Presenter: VAN TILBORG, Jeroen (LBNL)

Session Classification: Near Term Applications

Contribution ID: 40

Type: **not specified**

97: High intensity attosecond electron and photon beams

Thursday, 24 September 2020 11:25 (5 minutes)

Presenter: EMMA, Claudio (SLAC)

Session Classification: Near Term Applications

Contribution ID: 41

Type: **not specified**

47: Transformative Technology for FLASH Radiation Therapy

Thursday, 24 September 2020 11:30 (5 minutes)

Session Classification: Near Term Applications

Contribution ID: 42

Type: **not specified**

28: Ion Coulomb Crystals in Storage Rings for Quantum Information Science

Thursday, 24 September 2020 11:35 (5 minutes)

Session Classification: Near Term Applications

Contribution ID: 43

Type: **not specified**

ALEGRO LOI for Snowmass2021 Towards an Advanced Linear International Collider

Wednesday, 23 September 2020 08:30 (10 minutes)

Presenter: Dr CROS, Brigitte (CNRS)

Session Classification: Collider Concepts

Contribution ID: 44

Type: **not specified**

Laser-Plasma Accelerator Linear Collider

Wednesday, 23 September 2020 08:40 (10 minutes)

Presenter: SCHROEDER, Carl (Lawrence Berkeley National Laboratory)

Session Classification: Collider Concepts

Contribution ID: 45

Type: **not specified**

Path towards a Beam-Driven Plasma Linear Collider

Wednesday, 23 September 2020 08:50 (10 minutes)

Presenter: GESSNER, Spencer (SLAC)

Session Classification: Collider Concepts

Contribution ID: 46

Type: **not specified**

Argonne Flexible Linear Collider (AFLC) – Beyond Concept: A 3-TeV Linear Collider Using Short rf Pulse (~20 ns) Two-Beam Accelerator

Wednesday, 23 September 2020 09:00 (10 minutes)

Presenter: Dr JING, Chunguang (ANL)

Session Classification: Collider Concepts

Contribution ID: 47

Type: **not specified**

Optical Energy Recovery for a High Duty Cycle Gamma Ray Source

Wednesday, 23 September 2020 09:10 (5 minutes)

Presenter: MUROKH, Alex (RadiaBeam Technologies, LLC.)

Session Classification: Collider Concepts

Contribution ID: 48

Type: **not specified**

High energy physics applications of the AWAKE acceleration scheme

Wednesday, 23 September 2020 09:15 (5 minutes)

Presenter: Dr WING, Matthew (UCL)

Session Classification: Collider Concepts

Contribution ID: 49

Type: **not specified**

Beamdump Experiments Driven by a Plasma Wakeeld Accelerator

Wednesday, 23 September 2020 09:20 (5 minutes)

Presenter: GESSNER, Spencer (SLAC)

Session Classification: Collider Concepts

Contribution ID: 50

Type: **not specified**

Strategy Towards Ultimate Limits

Wednesday, 23 September 2020 09:25 (5 minutes)

Presenter: ZIMMERMANN, Frank (CERN)

Session Classification: Collider Concepts

Contribution ID: 51

Type: **not specified**

Discussion - all

Wednesday, 23 September 2020 09:30 (1 hour)

This session will flow into the following CPM sessions, and a coordinated strategy needs to be developed towards these topics over the coming year:

26 - Multi-TeV

129 - Higgs factories

AF26 - plasma collider energy and power limits

and will influence contributions to others including

AF10 -ultimate beams

54 - MDI

AF18 - 0.5-3 TeV

Session Classification: Collider Concepts

Contribution ID: 52

Type: **not specified**

Laser-driven Injectors for Future Colliders

Wednesday, 23 September 2020 13:30 (5 minutes)

Presenter: Dr FUCHS, Matthias (UNL)

Session Classification: Particle Sources

Contribution ID: 53

Type: **not specified**

High-Brightness Laser-Plasma-Based Injectors

Wednesday, 23 September 2020 13:35 (5 minutes)

Presenter: Dr BENEDETTI, Carlo (LBNL)

Session Classification: Particle Sources

Contribution ID: 54

Type: **not specified**

The Path to Compact, High-Intensity Beams

Wednesday, 23 September 2020 13:40 (5 minutes)

Presenter: WINKLEHNER, Daniel (Massachusetts Institute of Technology)

Session Classification: Particle Sources

Contribution ID: 55

Type: **not specified**

High brightness injectors based on PWFA

Wednesday, 23 September 2020 13:45 (5 minutes)

Presenter: Dr SCHERKL, Paul (Strathclyde)

Session Classification: Particle Sources

Contribution ID: 56

Type: **not specified**

Polarized targets for laser-plasma applications

Wednesday, 23 September 2020 13:50 (5 minutes)

Presenter: Dr BUSCHER, Markus (Juelich)

Session Classification: Particle Sources

Contribution ID: 57

Type: **not specified**

"Compact laser-based positron creation, capture, and cooling"

Wednesday, 23 September 2020 13:55 (5 minutes)

Presenter: BULANOV, Stepan (LBNL)

Session Classification: Particle Sources

Contribution ID: **58**

Type: **not specified**

Discussion- all

Wednesday, 23 September 2020 14:05 (25 minutes)

This session will flow into CPM sessions, including both AF6 based colliders and potential contributions to other colliders. A coordinated strategy needs to be developed towards these topics over the coming year. Sessions of special interest at the CPM include

26 - Multi-TeV

129 - Higgs factories

AF26 - plasma collider energy and power limits

Session Classification: Particle Sources

Contribution ID: 59

Type: **not specified**

Particle Colliders with Ultra-Short Bunches

Wednesday, 23 September 2020 14:30 (5 minutes)

Presenter: YAKIMENKO, Vitaly (SLAC)

Session Classification: Interaction Point

Contribution ID: **60**

Type: **not specified**

The impact of high-field physics on plasma-based particle colliders

Wednesday, 23 September 2020 14:35 (5 minutes)

Presenter: BULANOV, Stepan (LBNL)

Session Classification: Interaction Point

Contribution ID: **61**

Type: **not specified**

Accelerator phase space-control using high-intensity lasers

Wednesday, 23 September 2020 14:40 (5 minutes)

Presenter: Prof. THOMAS, Alec (University of Michigan)

Session Classification: Interaction Point

Contribution ID: 62

Type: **not specified**

A Bright Beam-Filamentation Driven Gamma-ray Source

Wednesday, 23 September 2020 14:45 (5 minutes)

Presenter: Dr FIUZA, Federico (SLAC)

Session Classification: Interaction Point

Contribution ID: 63

Type: **not specified**

Monochromatization of e+e- colliders with a large crossing angle

Wednesday, 23 September 2020 14:50 (5 minutes)

Presenter: Prof. TELNOV, Valery (Budker INP)

Session Classification: Interaction Point

Contribution ID: 64

Type: **not specified**

Gamma-gamma collider with $W\gamma\gamma \leq 12\text{GeV}$ based on the 17.5 GeV SC linac of the European XFEL

Wednesday, 23 September 2020 14:55 (5 minutes)

Presenter: TELNOV, Valery (Budker INP)

Session Classification: Interaction Point

Contribution ID: 65

Type: **not specified**

Discussion - all

Wednesday, 23 September 2020 15:00 (30 minutes)

This session will flow into the following CPM sessions, and a coordinated strategy needs to be developed towards these topics over the coming year:

AF10 -ultimate beams

AF26 - plasma collider energy and power limits

AF34 - Schwinger fields

and will influence contributions to others including

26 - Multi-TeV

129 - Higgs factories

54 - MDI

AF18 - 0.5-3 TeV

Session Classification: Interaction Point

Contribution ID: **66**

Type: **not specified**

Advanced Ionisation Cooling

Wednesday, 23 September 2020 14:00 (5 minutes)

Presenter: ROGERS, Chris (Rutherford Lab)

Session Classification: Particle Sources