

# **25th Accelerator Test Facility Users' Meeting**

## **Report of Contributions**

Contribution ID: **1**

Type: **not specified**

# Welcome

*Tuesday, 28 February 2023 09:45 (5 minutes)*

**Session Classification:** Opening Session

Contribution ID: 2

Type: **not specified**

## Meeting Logistics and Opening Remarks

*Tuesday, 28 February 2023 09:50 (5 minutes)*

**Presenter:** PALMER, Mark (Brookhaven National Laboratory)

**Session Classification:** Opening Session

Contribution ID: 3

Type: **not specified**

## Comments from DOE ARDAP

*Tuesday, 28 February 2023 10:15 (25 minutes)*

**Presenter:** COLBY, Eric (U. S. DOE)

**Session Classification:** Opening Session

Contribution ID: 4

Type: **not specified**

## Progress on Laser Upgrades

*Tuesday, 28 February 2023 11:00 (25 minutes)*

**Presenter:** BABZIEN, Marcus (BNL)

**Session Classification:** Opening Session

Contribution ID: 5

Type: **not specified**

## Facility Updates and Plans

*Thursday, 2 March 2023 11:20 (30 minutes)*

**Presenter:** SIMMONDS, Andrew

**Session Classification:** Closing Session

Contribution ID: 6

Type: **not specified**

## Science Priority Research Directions & Next Science Planning Workshop

*Thursday, 2 March 2023 11:50 (30 minutes)*

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

**Session Classification:** Closing Session

Contribution ID: 7

Type: **not specified**

## Introduction/Opening Remarks

**Presenter:** PALMER, Mark (Brookhaven National Laboratory)

**Session Classification:** Opening Session



Contribution ID: 8

Type: **not specified**

## **Accelerator Readiness Review Update & 2023 Running Plans**

*Tuesday, 28 February 2023 11:25 (20 minutes)*

**Presenter:** PALMER, Mark (Brookhaven National Laboratory)

**Session Classification:** Opening Session

Contribution ID: 9

Type: **not specified**

## Facility Status

**Presenter:** POLYANSKIY, Mikhail (Brookhaven National Laboratoty)

**Session Classification:** Opening Session

Contribution ID: **10**

Type: **not specified**

## 2023 Running Plans

**Presenter:** PALMER, Mark (Brookhaven National Laboratory)

**Session Classification:** Opening Session

Contribution ID: **11**

Type: **not specified**

## ATF Operations Status Report

*Tuesday, 28 February 2023 09:55 (20 minutes)*

**Presenter:** FEDURIN, Mikhail (BNL)

**Session Classification:** Opening Session

Contribution ID: **12**

Type: **not specified**

## Closeout

*Thursday, 2 March 2023 12:20 (15 minutes)*

**Presenter:** PALMER, Mark (Brookhaven National Laboratory)

**Session Classification:** Closing Session

Contribution ID: 13

Type: **not specified**

## **AE63 - Stony Brook Accelerator Laboratory Course**

*Tuesday, 28 February 2023 13:00 (25 minutes)*

Closeout

**Presenter:** FEDURIN, Mikhail (BNL)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 14

Type: **not specified**

## **AE85 - Multi atmospheric CO2 Amplifier Optically Pumped by a 4.3 micron FeZnSe Laser**

*Tuesday, 28 February 2023 13:25 (25 minutes)*

Closeout

**Presenter:** TOCHITSKY, Sergei (UCLA)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 15

Type: **not specified**

## AE87 - Hard X-ray ICS

Closeout

**Presenter:** SAKAI, Yusuke (UCLA)

**Session Classification:** Status Reports & New Proposals



Contribution ID: 16

Type: **not specified**

## **AE89 – Plasma Compression for Terawatt Long Wavelength Lasers**

*Tuesday, 28 February 2023 13:50 (20 minutes)*

Status Report

**Presenter:** GORDON, Daniel (Naval Research Laboratory)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 17

Type: **not specified**

## **AE93 - Direct Measurement of Fields and Radiation in the Self-Modulated Plasma Wakefield Regime**

*Tuesday, 28 February 2023 14:10 (20 minutes)*

Status Report

**Presenter:** PETRUSHINA, Irina (Stony Brook University)

**Session Classification:** Status Reports & New Proposals

Contribution ID: **18**

Type: **not specified**

## **AE95 - Optical Diagnosis of Self-Modulated CO<sub>2</sub>-laser Driven Plasma Wakes**

*Tuesday, 28 February 2023 15:30 (20 minutes)*

Status Report

**Presenter:** ZGADZAJ, Rafal (The University of Texas at Austin)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 19

Type: **not specified**

## **AE98 – Probing electron Weibel instability in optical field-ionized plasmas using ultrashort electron bunches**

*Tuesday, 28 February 2023 15:50 (20 minutes)*

Status Report

**Presenter:** ZHANG, Chaojie (UCLA)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 20

Type: **not specified**

## **AE99 – Directional X-ray radiation produced by an ultra-short period plasma magneto-static undulator**

*Tuesday, 28 February 2023 16:10 (20 minutes)*

Status Report

**Presenter:** WU, Yipeng (UCLA)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 21

Type: **not specified**

## **AE101 - Optical Materials for Ultrahigh-Power Long-Wave Infrared Lasers**

*Tuesday, 28 February 2023 16:30 (20 minutes)*

Status Report

**Presenter:** POLYANSKIY, Mikhail (Brookhaven National Laboratoty)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 22

Type: **not specified**

## **AE100 – The Study of High-Intensity Laser Pulse Interactions with Near-Critical Density Plasmas**

*Wednesday, 1 March 2023 09:05 (20 minutes)*

**Presenter:** DOVER, Nicholas (ICL)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 23

Type: **not specified**

## **AE108 – Development of Wavelength Conversion Techniques for Generation of Coherent Radiation at the Mid- to Long-wave Infrared**

*Wednesday, 1 March 2023 09:25 (20 minutes)*

Status Report

**Presenter:** LI, William (BNL)

**Session Classification:** Status Reports & New Proposals



Contribution ID: 24

Type: **not specified**

## Announcements & Session Intro

*Wednesday, 1 March 2023 09:00 (5 minutes)*

**Presenter:** POGORELSKY, Igor (BNL/CAD)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 25

Type: **not specified**

## Advanced Accelerator and Laser Laboratory Course

*Wednesday, 1 March 2023 10:45 (30 minutes)*

New Proposal - 312804

**Co-author:** POLYANSKIY, Mikhail (Brookhaven National Laboratoty)

**Presenters:** FEDURIN, Mikhail (BNL); POLYANSKIY, Mikhail (Brookhaven National Laboratoty)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 26

Type: **not specified**

## Two Color Injection of Bright Electron Beams

*Wednesday, 1 March 2023 11:15 (30 minutes)*

New Proposal - 312796

**Primary author:** LI, William (BNL)

**Presenters:** VAF AEI-NAJAFABADI, Navid (Stony Brook University); LI, William (BNL)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 27

Type: **not specified**

## **AE119 – Radiofrequency Emission from 10 Micron Short Pulse Laser Ionized Gases and Solids**

*Wednesday, 1 March 2023 09:45 (20 minutes)*

Status Report

**Presenter:** ERIN, Thornton (AFRL)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 28

Type: **not specified**

## **AE122 – Remote Detection of Radioactive Materials Using Long Wave Infrared Laser-driven Avalanche Breakdown**

*Wednesday, 1 March 2023 10:05 (20 minutes)*

Status Report

**Presenter:** ZINGALE, Anthony (@lanl.gov)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 29

Type: **not specified**

## **AE124 – Simulation-aided Instrument Optimization using Artificial Intelligence and Machine Learning Methods**

*Wednesday, 1 March 2023 14:45 (20 minutes)*

**Presenter:** RAKITIN, Maksim (BNL)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 30

Type: **not specified**

## **Generation of fast neutrons with ions accelerated by a far-infrared laser**

*Wednesday, 1 March 2023 11:45 (30 minutes)*

Proposal 312792

**Presenter:** KAROLY, Osvay (University of Szeged)

**Session Classification:** Status Reports & New Proposals

Contribution ID: **31**

Type: **not specified**

## **UE104 – Structure phase transition on Weyl semimetal MoTe<sub>2</sub>**

*Wednesday, 1 March 2023 13:15 (25 minutes)*

Closeout

**Presenter:** LI, Junjie (Brookhaven national Lab)

**Session Classification:** Status Reports & New Proposals



Contribution ID: 32

Type: **not specified**

## **UE111 – Ultrafast Electron Microscopy with Flux Concentrator Objective Lens**

*Wednesday, 1 March 2023 13:40 (25 minutes)*

Closeout

**Presenter:** JING, Chunguang (Euclid)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 33

Type: **not specified**

## **UE109 – Study of ultrafast Light Induced Structural Phase Transition (SPT) and ultrafast modulation of domains in Weyl Semimetal, MoTe<sub>2</sub>,**

*Thursday, 2 March 2023 10:45 (20 minutes)*

Status Report

**Presenter:** FREELON, Byron (University of Houston)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 34

Type: **not specified**

**UE110 – Baseline materials for characterizing the  
MUED configuration, their role verifying daily  
alignment and in operation and implementation of a  
non-destructive real-time machine learning  
diagnostic for ensuring beam stability**

*Wednesday, 1 March 2023 14:05 (20 minutes)*

Status Report

**Presenter:** BOLIN, Trudy (University of New Mexico)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 36

Type: **not specified**

## **Remote detection of radioactive materials using long wave infrared laser-driven avalanche breakdown**

New Proposal: 312793

**Session Classification:** Status Reports & New Proposals

Contribution ID: 37

Type: **not specified**

## **Ionization Currents and Secondary Radiation from Two-Color Pulses at Long Laser Wavelengths**

*Wednesday, 1 March 2023 16:30 (30 minutes)*

New Proposal: 312798

**Presenter:** ENGLESBE, Alexander (Naval Research Laboratory)

**Session Classification:** Status Reports & New Proposals

Contribution ID: **38**

Type: **not specified**

## **Broadband microwave emissions from LWIR picosecond laser ablation with pre-ionization**

*Wednesday, 1 March 2023 16:00 (30 minutes)*

New Proposal: 312114

**Presenter:** GOERS, Andy (Johns Hopkins University Applied Physics Labs)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 39

Type: **not specified**

## **UE117 – Advanced Control of the ATF MUED Electron Beam Using Automation, Artificial Intelligence, and High-Performance Computing**

*Wednesday, 1 March 2023 14:25 (20 minutes)*

Status Report

**Presenter:** BOLIN, Trudy (UNM)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 40

Type: **not specified**

## **Tunable positron source: trapping ATF electron beam driven shower positrons**

*Thursday, 2 March 2023 09:10 (30 minutes)*

New Proposal: 312795

**Presenter:** SAHAI, Aakash (Univ of Colorado)

**Session Classification:** Status Reports & New Proposals



Contribution ID: 41

Type: **not specified**

## Announcements & Session Intro

*Thursday, 2 March 2023 09:00 (10 minutes)*

**Session Classification:** Status Reports & New Proposals

Contribution ID: 42

Type: **not specified**

# Novel Application of a Pulsed Electron Linear Accelerator as a Single Event Effects Simulator

*Thursday, 2 March 2023 09:40 (30 minutes)*

New Proposal: 312807

**Presenter:** ALLEN, Greg (NASA Jet Propulsion Laboratory (JPL))

**Session Classification:** Status Reports & New Proposals

Contribution ID: 43

Type: **not specified**

## AE87 (Hard X-Ray ICS) and New ICS Proposal

*Thursday, 2 March 2023 10:10 (35 minutes)*

Combined Closeout & New Proposal

**Presenter:** SAKAI, Yusuke (UCLA)

**Session Classification:** Status Reports & New Proposals

Contribution ID: 44

Type: **not specified**

## **Benchmarking the radiation dose simulator around the CO2 laser IP**

*Wednesday, 1 March 2023 15:30 (30 minutes)*

New Proposal

**Presenter:** ROSENSTROM, Andrew (SLAC)

**Session Classification:** Status Reports & New Proposals