

# **IOTA/FAST Collaboration Meeting 2024**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

# The IOTA/FAST Facility: Status, Performance, Upgrades

*Tuesday, 12 March 2024 10:55 (25 minutes)*

**Presenter:** ROMANOV, Aleksandr (Fermilab/AD/IOTA)

**Session Classification:** Overview

Contribution ID: 2

Type: **not specified**

## **Laser Systems: Status and Upgrades**

*Thursday, 14 March 2024 09:00 (25 minutes)*

**Presenter:** RUAN, Jinhao (Fermilab)

**Session Classification:** Upcoming Research Program

Contribution ID: 3

Type: **not specified**

## Operations in Run 4

*Tuesday, 12 March 2024 13:30 (25 minutes)*

**Presenter:** MACLEAN, Daniel (FNAL: FAST Facility / IOTA)

**Session Classification:** Run 4 Experiment Reports

Contribution ID: 4

Type: **not specified**

## **Nonlinear Integrable Optics (NIO)**

*Tuesday, 12 March 2024 14:00 (25 minutes)*

**Presenters:** WIELAND, John (Michigan State University); KUKLEV, Nikita (Argonne/UChicago)

**Session Classification:** Run 4 Experiment Reports

Contribution ID: 5

Type: **not specified**

## **Instability Thresholds (NIOLD)**

*Tuesday, 12 March 2024 14:30 (25 minutes)*

**Presenter:** BOSSARD, Mary (Graduate Student)

**Session Classification:** Run 4 Experiment Reports

Contribution ID: 6

Type: **not specified**

# Interferometry of Undulator Radiation from Single Electrons (CLARA)

*Tuesday, 12 March 2024 16:00 (25 minutes)*

**Presenters:** STANCARI, Giulio (Fermilab); SHEMYAKIN, Alexander (Fermilab)

**Session Classification:** Run 4 Experiment Reports

Contribution ID: 7

Type: **not specified**

## Single-Electron Tracking (SETI)

*Tuesday, 12 March 2024 15:30 (25 minutes)*

**Presenter:** ROMANOV, Aleksandr (Fermilab/AD/IOTA)

**Session Classification:** Run 4 Experiment Reports



Contribution ID: 8

Type: **not specified**

## Quasi-Isochronous Lattices (LADR)

*Tuesday, 12 March 2024 16:30 (25 minutes)*

**Presenter:** WALLBANK, Michael (Fermilab)

**Session Classification:** Run 4 Experiment Reports

Contribution ID: 9

Type: **not specified**

## **Tapering Enhanced Stimulated Super-Radiant Amplification (FAST-GREENS)**

*Wednesday, 13 March 2024 10:30 (25 minutes)*

**Presenters:** MUSUMECI, Pietro (UCLA); MUROKH, Alex (RadiaBeam Technologies, LLC.)

**Session Classification:** Run 4 Experiment Reports

Contribution ID: **10**

Type: **not specified**

## **Noise in Intense Electron Bunches (NEB)**

*Wednesday, 13 March 2024 10:00 (25 minutes)*

**Presenter:** KLADOV, Sergei (The University of Chicago)

**Session Classification:** Run 4 Experiment Reports

Contribution ID: 11

Type: **not specified**

## Welcome and Logistics

*Tuesday, 12 March 2024 10:00 (10 minutes)*

**Presenters:** STANCARI, Giulio (Fermilab); FEE, Hannah (Accelerator Division)

**Session Classification:** Overview

Contribution ID: 12

Type: **not specified**

## **Research at IOTA/FAST: Vision and Strategy**

*Tuesday, 12 March 2024 10:25 (25 minutes)*

**Presenter:** VALISHEV, Alexander (Fermilab)

**Session Classification:** Overview

Contribution ID: 13

Type: **not specified**

## **Scientific Program: Conducting Experiments at IOTA/FAST**

*Tuesday, 12 March 2024 11:25 (25 minutes)*

**Presenter:** STANCARI, Giulio (Fermilab)

**Session Classification:** Overview

Contribution ID: 14

Type: **not specified**

## **Optical Stochastic Cooling: The Next Phase**

*Wednesday, 13 March 2024 14:30 (25 minutes)*

**Presenter:** JARVIS, Jonathan (Fermilab)

**Session Classification:** Upcoming Research Program

Contribution ID: 15

Type: **not specified**

# Installation and Commissioning of the Proton Injector

*Wednesday, 13 March 2024 11:00 (25 minutes)*

**Presenter:** EDSTROM, Dean (AD/APC/FAST)

**Session Classification:** Upcoming Research Program



Contribution ID: 16

Type: **not specified**

## **Experiments with Electron Cooling and Space Charge**

*Wednesday, 13 March 2024 13:00 (25 minutes)*

**Presenter:** BANERJEE, Nilanjan (Fermilab)

**Session Classification:** Upcoming Research Program

Contribution ID: 17

Type: **not specified**

## **Performance and Challenges of the Fermilab Accelerator Complex and the Role of IOTA/FAST**

*Tuesday, 12 March 2024 13:00 (25 minutes)*

**Presenters:** GONZALEZ-ORTIZ, Cristhian (Michigan State University); AINSWORTH, Robert (Fermilab)

**Session Classification:** Synergies

Contribution ID: 18

Type: **not specified**

## **Accelerator Controls Upgrades at Fermilab (ACORN) and Implementations at IOTA/FAST**

*Thursday, 14 March 2024 11:00 (25 minutes)*

**Presenter:** ROEHRIG, Christian

**Session Classification:** Synergies

Contribution ID: 19

Type: **not specified**

# The Role of Test Facilities in Beam Physics Research

*Thursday, 14 March 2024 14:00 (25 minutes)*

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

**Session Classification:** Synergies

Contribution ID: 21

Type: **not specified**

# Pixelated Photodetectors for Single-Electron Tracking

*Wednesday, 13 March 2024 14:00 (25 minutes)*

**Presenter:** FIORINI, Massimiliano (INFN Sezione di Ferrara and Università degli Studi di Ferrara)

**Session Classification:** Upcoming Research Program

Contribution ID: 22

Type: **not specified**

## **Beam Physics Research in Context: Community Priorities (GARD ABP Roadmap, ARDAP and P5 Recommendations)**

*Thursday, 14 March 2024 13:30 (25 minutes)*

**Presenter:** VALISHEV, Alexander (Fermilab)

**Session Classification:** Synergies

Contribution ID: 23

Type: **not specified**

## **High-Efficiency and Low-Emittance Electron Sources**

*Thursday, 14 March 2024 10:00 (25 minutes)*

**Presenters:** CHUBENKO, Oksana (NIU); MAXSON, Jared (Cornell University)

**Session Classification:** Upcoming Research Program

Contribution ID: 24

Type: **not specified**

## **Federico Levi (Springer Nature): Inside Nature**

*Wednesday, 13 March 2024 15:30 (1 hour)*

**Session Classification:** Fermilab Colloquium



Contribution ID: 25

Type: **not specified**

## Conclusions

*Thursday, 14 March 2024 14:30 (15 minutes)*

**Presenter:** JARVIS, Jonathan (Fermilab)

**Session Classification:** Conclusions

Contribution ID: 26

Type: **not specified**

## Proton Beam Diagnostics

*Wednesday, 13 March 2024 11:30 (25 minutes)*

**Presenters:** THURMAN-KEUP, Randy (Fermilab); EDDY, Nathan (Fermilab)

**Session Classification:** Upcoming Research Program

Contribution ID: 27

Type: **not specified**

## Welcome from the Director

*Tuesday, 12 March 2024 10:10 (10 minutes)*

**Presenters:** VALISHEV, Alexander (Fermilab); MERMINGA, Lia (FNAL)

**Session Classification:** Overview

Contribution ID: 28

Type: **not specified**

## **Beam Dynamics with Space Charge in ImpactX: Code Design and IOTA Applications**

*Wednesday, 13 March 2024 13:30 (25 minutes)*

**Presenter:** MITCHELL, Chad (Lawrence Berkeley National Laboratory)

**Session Classification:** Upcoming Research Program

Contribution ID: 29

Type: **not specified**

## **Plasma Processing of Superconducting Cavities for In-Situ Performance Improvement**

*Thursday, 14 March 2024 11:30 (25 minutes)*

**Presenter:** GIACCONE, Bianca

**Session Classification:** Synergies

Contribution ID: **30**

Type: **not specified**

# **Error Detection in Linacs with Machine Learning Techniques**

*Thursday, 14 March 2024 09:30 (25 minutes)*

**Presenter:** EDELEN, Jonathan (RadiaSoft LLC)

**Session Classification:** Upcoming Research Program

Contribution ID: 32

Type: **not specified**

# Very High Energy Electrons for Radiation Therapy

*Thursday, 14 March 2024 13:00 (25 minutes)*

**Presenter:** JOHNSTONE, Carol (Fermilab)

**Session Classification:** Synergies