

# **Muon Collider Physics and Detector workshop**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

# **Fermilab Wine and Cheese Seminar: Physics at the Muon Collider**

*Friday, 16 December 2022 16:00 (1 hour)*

**Presenter:** PAGAN GRISO, Simone (Lawrence Berkeley National Laboratory)

Contribution ID: 2

Type: **not specified**

## **Welcome from the Fermilab's Future Colliders Group**

*Thursday, 15 December 2022 09:05 (20 minutes)*

**Presenter:** BHAT, Pushpalatha (Fermilab)

**Session Classification:** Introduction

Contribution ID: 3

Type: **not specified**

## **IMCC Status and Plans**

*Thursday, 15 December 2022 09:25 (20 minutes)*

**Presenter:** PASTRONE, Nadia (INFN-Torino)

**Session Classification:** Introduction

Contribution ID: 4

Type: **not specified**

## **Muon Collider Forum Summary**

*Thursday, 15 December 2022 09:45 (20 minutes)*

**Presenter:** BLACK, Kevin (University of Wisconsin, Madison)

**Session Classification:** Introduction

Contribution ID: 5

Type: **not specified**

## Discussion

*Thursday, 15 December 2022 10:05 (25 minutes)*

**Session Classification:** Introduction

Contribution ID: 6

Type: **not specified**

## **Accelerator R&D needs and near term priorities**

*Thursday, 15 December 2022 11:00 (25 minutes)*

**Presenter:** SHILTSEV, Vladimir (FNAL)

**Session Classification:** Introduction

Contribution ID: 7

Type: **not specified**

## **Interplay between Accelerator and Detector design**

*Thursday, 15 December 2022 11:25 (25 minutes)*

**Presenter:** LUCCHESI, Donatella (INFN-Padova)

**Session Classification:** Introduction



Contribution ID: 8

Type: **not specified**

## Discussion

*Thursday, 15 December 2022 11:50 (20 minutes)*

**Session Classification:** Introduction

Contribution ID: 9

Type: **not specified**

## Overview of FullSim Framework

*Friday, 16 December 2022 09:00 (25 minutes)*

**Presenter:** BARTOSIK, Nazar (INFN Torino)

**Session Classification:** Simulation Framework

Contribution ID: **10**

Type: **not specified**

## **Framework to do : from 3 to 10 TeV**

*Friday, 16 December 2022 09:25 (25 minutes)*

**Presenter:** MELONI, Federico (Deutsches Elektronen-Synchrotron)

**Session Classification:** Simulation Framework

Contribution ID: 11

Type: **not specified**

## Discussion

*Friday, 16 December 2022 10:15 (15 minutes)*

**Session Classification:** Simulation Framework

Contribution ID: 12

Type: **not specified**

## Pheno Requirements

*Friday, 16 December 2022 11:00 (25 minutes)*

**Presenter:** LIU, Zhen (University of Minnesota)

**Session Classification:** Detectors

Contribution ID: 13

Type: **not specified**

## **Detector needs from first principles**

*Friday, 16 December 2022 11:25 (25 minutes)*

**Presenter:** HOLMES, Tova (University of Tennessee)

**Session Classification:** Detectors

Contribution ID: 14

Type: **not specified**

## **Calorimeter needs from first principles**

**Session Classification:** Detectors

Contribution ID: 15

Type: **not specified**

## **Muon needs from first principles**

**Session Classification:** Detectors



Contribution ID: 16

Type: **not specified**

## FastSim with Delphes

**Session Classification:** Detectors

Contribution ID: 17

Type: **not specified**

# Auxiliary Experiments

**Session Classification:** Detectors

Contribution ID: **18**

Type: **not specified**

## **Next steps for the detector**

**Session Classification:** Detectors

Contribution ID: **19**

Type: **not specified**

## Discussion

**Session Classification:** Detectors

Contribution ID: **20**

Type: **not specified**

## Discussion

*Friday, 16 December 2022 11:50 (10 minutes)*

**Session Classification:** Detectors

Contribution ID: 21

Type: **not specified**

## **Muon-Ion Collider Update**

**Session Classification:** Detectors

Contribution ID: 22

Type: **not specified**

## FastSim with Delphes

*Friday, 16 December 2022 09:50 (25 minutes)*

**Presenter:** CASARSA, Massimo (INFN-Trieste)

**Session Classification:** Simulation Framework

Contribution ID: 23

Type: **not specified**

## Beam Dump Experiments

*Friday, 16 December 2022 14:00 (20 minutes)*

**Presenter:** CESAROTTI, Cari (MIT)

**Session Classification:** Synergies



Contribution ID: 24

Type: **not specified**

## Charged Lepton Flavor Violation Experiments

*Friday, 16 December 2022 13:20 (20 minutes)*

**Presenter:** BERNSTEIN, Robert (Fermilab)

**Session Classification:** Synergies

Contribution ID: 25

Type: **not specified**

## Discussion

**Session Classification:** Synergies

Contribution ID: 26

Type: **not specified**

## Why we need the energy frontier

*Thursday, 15 December 2022 13:30 (30 minutes)*

**Presenter:** CRAIG, Nathaniel (UC Santa Barbara)

**Session Classification:** Physics

Contribution ID: 27

Type: **not specified**

## **Electroweak Symmetry Breaking and physics opportunities**

*Thursday, 15 December 2022 14:00 (30 minutes)*

**Presenter:** LOW, Ian (Argonne/Northwestern)

**Session Classification:** Physics

Contribution ID: 28

Type: **not specified**

## Single Higgs Precision at a Muon Collider

*Thursday, 15 December 2022 14:30 (25 minutes)*

**Presenter:** FORSLUND, Matthew (Stony Brook University)

**Session Classification:** Physics

Contribution ID: 29

Type: **not specified**

## **Dark Matter at a Muon Collider**

*Thursday, 15 December 2022 15:30 (25 minutes)*

**Presenter:** WANG, Liantao (University of Chicago)

**Session Classification:** Physics

Contribution ID: **30**

Type: **not specified**

## **Leptoquarks**

*Thursday, 15 December 2022 15:55 (25 minutes)*

**Presenter:** CAPDEVILLA, Rodolfo (Perimeter Institute and University of Toronto)

**Session Classification:** Physics

Contribution ID: **31**

Type: **not specified**

## **g-2 and Muon Collider**

*Thursday, 15 December 2022 16:20 (25 minutes)*

**Presenter:** KRNJAIC, Gordan (Fermilab)

**Session Classification:** Physics



Contribution ID: **32**

Type: **not specified**

## **HNL**

*Thursday, 15 December 2022 16:45 (25 minutes)*

**Presenter:** LYU, Kunfeng (University of Minnesota)

**Session Classification:** Physics

Contribution ID: **33**

Type: **not specified**

## **MuIC**

*Friday, 16 December 2022 13:00 (20 minutes)*

**Presenter:** ACOSTA, Darin (Rice University)

**Session Classification:** Synergies

Contribution ID: **34**

Type: **not specified**

## Neutrinos

*Friday, 16 December 2022 13:40 (20 minutes)*

**Presenter:** YONEHARA, Katsuya (Fermilab)

**Session Classification:** Synergies

Contribution ID: 35

Type: **not specified**

## Discussion

*Thursday, 15 December 2022 17:10 (20 minutes)*

**Session Classification:** Physics

Contribution ID: 36

Type: **not specified**

## **Fermilab Colloquium: Landscape of Particle Accelerators and Snowmass'21 Planning for Future**

*Wednesday, 14 December 2022 16:00 (1 hour)*

**Presenter:** SHILTSEV, Vladimir (FNAL)

Contribution ID: 37

Type: **not specified**

## Workshop Photo

**Session Classification:** Introduction

Contribution ID: **38**

Type: **not specified**

## Workshop Logistics

*Thursday, 15 December 2022 09:00 (5 minutes)*

**Presenter:** JINDARIANI, Sergo (Fermilab)

**Session Classification:** Introduction

Contribution ID: **39**

Type: **not specified**

## **Workshop Reception**

*Thursday, 15 December 2022 18:00 (1h 30m)*