

# **Cross-frontier meeting (AF - EF - RF): Dark sectors and Light Long-lived particles**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

## Energy Frontier probes

*Wednesday, July 15, 2020 11:00 AM (20 minutes)*

**Presenter:** ALIMENA, Juliette

**Session Classification:** Day 1

Contribution ID: 2

Type: **not specified**

## **Probing LLPs and Dark Matter with MATHUSLA at the HL-LHC**

*Wednesday, July 15, 2020 11:30 AM (10 minutes)*

**Presenter:** LUBATTI, Henry (University of Washington, Seattle)

**Session Classification:** Day 1

Contribution ID: 3

Type: **not specified**

## **milliQan, FerMINI, et al.**

*Wednesday, July 15, 2020 12:00 PM (10 minutes)*

**Presenters:** HILL, Christopher (The Ohio State University); HILL, Christopher (OSU); CITRON, Matthew (Univ. of California Santa Barbara (US))

**Session Classification:** Day 1

Contribution ID: 4

Type: **not specified**

## FASERnu

*Wednesday, July 15, 2020 12:15 PM (10 minutes)*

The recently approved FASERnu detector is the first neutrino experiment at the LHC. It will detect over thousands of neutrino interactions during the upcoming Run 3 of the LHC, with typical neutrino energies of a TeV. It will measure neutrino cross sections at energies where they are currently unconstrained, will bound models of forward particle production, and could open a new window on physics beyond the standard model. As the first of its kind, FASERnu also paves the way for a high energy neutrino frontier program during the HL-LHC era, with higher luminosities and possibly larger detectors. We propose to explore the full SM and BSM physics potential of collider neutrino experiments at the LHC and future colliders, and look forward to many great ideas from the energy frontier community.

**Presenter:** KLING, Felix (SLAC)

**Session Classification:** Day 1

Contribution ID: 5

Type: **not specified**

## HNL at HL-LHC with the CMS Muon Spectrometer

*Wednesday, July 15, 2020 12:30 PM (10 minutes)*

Study of the sensitivity to long-lived heavy neutrinos (i.e Heavy Neutral Leptons or HNL) with the capabilities of the CMS muon system at the HL-LHC. The study of the reach for a long-lived neutrino - with a dedicated displaced trigger in the muon system - will have the advantage to detect fully hadronic decays of the HNL. We foresee this to be potentially optimal to study the tau sector in HNL models. This strategy would be complementary to track-based searches at ATLAS and CMS for displaced vertices from the neutrino decay (reconstructed either in the inner-trackers or muon systems).

**Presenter:** COTTIN, Giovanna (Universidad Adolfo Ibañez (CL))

**Session Classification:** Day 1

Contribution ID: 6

Type: **not specified**

## Codex-b

*Wednesday, July 15, 2020 11:45 AM (10 minutes)*

We intend to summarize recent progress on the CODEX-b proposal, including but not limited to the physics case, demonstrator detector (CODEX-beta) and simulation framework. This will include concrete first steps and a clear road map for the progression of the proposal towards a realized experiment. We very much welcome new collaborators, especially people with an interest in hardware development, simulation and event reconstruction.

**Presenters:** KNAPEN, Simon (Lawrence Berkeley National Lab and UC Berkeley); KNAPEN, Simon Knapen (Rutgers, the state university of New Jersey)

**Session Classification:** Day 1

Contribution ID: 7

Type: **not specified**

## **Intensity Frontier probes**

*Thursday, July 16, 2020 11:00 AM (20 minutes)*

**Presenter:** TORO, Natalia (SLAC National Accelerator Laboratory)

**Session Classification:** Day 2



Contribution ID: 8

Type: **not specified**

## DarkQuest

*Thursday, July 16, 2020 12:00 PM (10 minutes)*

**Presenter:** MANTILLA SUAREZ, Cristina Ana (Johns Hopkins University)

**Session Classification:** Day 2

Contribution ID: 9

Type: **not specified**

## **LDMX**

*Thursday, July 16, 2020 12:15 PM (10 minutes)*

**Presenter:** NELSON, Tim (SLAC)

**Session Classification:** Day 2

Contribution ID: **10**

Type: **not specified**

## **neutron—dark-neutron oscillation**

*Thursday, July 16, 2020 12:30 PM (10 minutes)*

**Presenter:** BARROW, Joshua

**Session Classification:** Day 2

Contribution ID: 11

Type: **not specified**

## **Theoretical overview and discussion**

*Thursday, July 16, 2020 12:45 PM (20 minutes)*

**Presenter:** POSPELOV, Maxim

**Session Classification:** Day 2

Contribution ID: 12

Type: **not specified**

## Discussion

*Thursday, July 16, 2020 1:05 PM (40 minutes)*

**Session Classification:** Day 2

Contribution ID: 13

Type: **not specified**

## Padme

*Thursday, July 16, 2020 11:30 AM (10 minutes)*

**Presenter:** RAGGI, Mauro (Sapienza University Rome)

**Session Classification:** Day 2

Contribution ID: 14

Type: **not specified**

## **Future PADME runs**

*Thursday, July 16, 2020 11:45 AM (10 minutes)*

**Presenter:** MARSICANO , luca

**Session Classification:** Day 2

Contribution ID: 15

Type: **not specified**

## CBETA

*Wednesday, July 15, 2020 12:45 PM (10 minutes)*

**Presenter:** Prof. MILNER, Richard (MIT)

**Session Classification:** Day 1



Contribution ID: 16

Type: **not specified**

## **AF5 Overview/ Fermilab Upgrade Opportunities**

*Wednesday, July 15, 2020 1:15 PM (20 minutes)*

**Presenter:** PREBYS, Eric (UC Davis)

**Session Classification:** Day 1

Contribution ID: 17

Type: **not specified**

## Forward Physics Facility

*Wednesday, July 15, 2020 1:00 PM (10 minutes)*

There is growing interest in the far forward region at the LHC. Detectors placed hundreds of meters downstream from existing interaction points along the beam collision axis may search for LLPs, detect thousands of TeV neutrinos, and make measurements of relevance for a broad range of topics, from hadronic physics to cosmic ray experiments. These efforts are currently limited to fit within existing tunnels, but one could imagine enlarging this space to create a Forward Physics Facility, which would allow more and larger experiments to be placed there, with a huge gain in sensitivity to new physics and standard model studies. In this talk, I would like to propose such a Facility, present some nascent ideas of what it could be good for, and stimulate physicists with a broad range of interests to come together to study the feasibility of creating such a Facility and explore the ways it could expand the existing LHC physics program.

**Presenter:** FENG, Jonathan (UC Irvine)**Session Classification:** Day 1

Contribution ID: **18**

Type: **not specified**

## **Beam Dump Driven by Wakefield Accelerator**

*Wednesday, July 15, 2020 1:35 PM (15 minutes)*

**Presenter:** GESSNER, Spencer (SLAC)

**Session Classification:** Day 1

Contribution ID: 19

Type: **not specified**

## **Magnet and RF Needs for Hidden/Dark Sector Searches**

*Wednesday, July 15, 2020 1:50 PM (10 minutes)*

**Presenter:** BOWRING, Daniel (Fermilab)

**Session Classification:** Day 1