

# **BREAD Collaboration Meeting October 2023**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

# Welcome

*Wednesday, 4 October 2023 09:00 (15 minutes)*

**Presenter:** MILLER, David (University of Chicago)

**Session Classification:** Introduction and Logistics

Contribution ID: 9

Type: **not specified**

## **Single Photon Counting from 10-100 GHz - A Review (remote)**

*Wednesday, 4 October 2023 09:15 (30 minutes)*

**Presenter:** HOFHEINZ, Max

**Session Classification:** GHz to THz Detectors

Contribution ID: 14

Type: **not specified**

## Quantum Capacitance Detectors at Fermilab

*Wednesday, 4 October 2023 10:15 (20 minutes)*

current status, LDRD proposal

**Presenters:** YU, Jialin; KHATIWADA, Rakshya

**Session Classification:** GHz to THz Detectors

Contribution ID: 15

Type: **not specified**

## **Kinetic Inductance Parametric Amplifiers at Fermilab**

*Wednesday, 4 October 2023 11:20 (20 minutes)*

**Presenter:** TEMPLES, Dylan (Fermilab)

**Session Classification:** GHz to THz Detectors

Contribution ID: **18**

Type: **not specified**

## **Optical-grade Reflector Manufacturing (remote)**

*Thursday, 5 October 2023 13:00 (15 minutes)*

**Presenter:** CAROSI, Gianpaolo (Lawrence Livermore National Laboratory)

**Session Classification:** InfraBREAD & Optical Detection

Contribution ID: 19

Type: **not specified**

## **SNSPD Tests in ADR at Fermilab: Results and Plans**

*Friday, 6 October 2023 09:25 (20 minutes)*

**Presenter:** WANG, Christina (California Institute of Technology)

**Session Classification:** InfraBREAD & Optical Detection

Contribution ID: 23

Type: **not specified**

## **Optical Characterization of Reflector Parts at Fermilab**

*Friday, 6 October 2023 09:50 (20 minutes)*

**Presenters:** IMRAN, Aiman; BROWNING, Robert C.

**Session Classification:** InfraBREAD & Optical Detection

Contribution ID: **31**

Type: **not specified**

## **QUALIPHIDE (remote)**

*Wednesday, 4 October 2023 10:55 (20 minutes)*

<https://inspirehep.net/literature/2148929>

**Presenter:** KLIMOVICH, Nikita

**Session Classification:** GHz to THz Detectors

Contribution ID: 32

Type: **not specified**

## **Dielectric Enhancement: Concept**

*Thursday, 5 October 2023 09:30 (20 minutes)*

**Presenter:** BARYAKHTAR, Masha

**Session Classification:** Enhancing the signal in BREAD: Array, Dielectrics, Resonances

Contribution ID: 33

Type: **not specified**

## **Resonant Enhancement: LDRD Proposal**

*Thursday, 5 October 2023 10:50 (20 minutes)*

**Presenter:** KNIRCK, Stefan (Fermi National Accelerator Laboratory)

**Session Classification:** Enhancing the signal in BREAD: Array, Dielectrics, Resonances

Contribution ID: 34

Type: **not specified**

## Dish Arrays

*Thursday, 5 October 2023 09:15 (10 minutes)*

**Presenter:** KNIRCK, Stefan (Fermi National Accelerator Laboratory)

**Session Classification:** Enhancing the signal in BREAD: Array, Dielectrics, Resonances

Contribution ID: 35

Type: **not specified**

## **Primer: Sensitivity of Dish Antennas - Why we need more**

*Thursday, 5 October 2023 09:00 (10 minutes)*

**Presenter:** LIU, Jesse (University of Cambridge)

**Session Classification:** Enhancing the signal in BREAD: Array, Dielectrics, Resonances

Contribution ID: 37

Type: **not specified**

## **Single THz Photon Detection for axion searches with Qbits at SLAC**

*Wednesday, 4 October 2023 09:50 (20 minutes)*

**Presenters:** SALEMI, Chiara (Stanford University and SLAC); KURINSKY, Noah (SLAC National Laboratory)

**Session Classification:** GHz to THz Detectors

Contribution ID: **38**

Type: **not specified**

## **Large-scale NSF proposal and other opportunities**

*Thursday, 5 October 2023 15:10 (20 minutes)*

**Presenter:** MILLER, David (University of Chicago)

**Session Classification:** Scaling Up BREAD

Contribution ID: 39

Type: **not specified**

## **Brainstorming / Discussion**

*Thursday, 5 October 2023 15:35 (30 minutes)*

**Session Classification:** Scaling Up BREAD

Contribution ID: 40

Type: **not specified**

## **Fermilab Dark-Wave Lab: preparations for a large-scale axion facility**

*Thursday, 5 October 2023 14:20 (20 minutes)*

**Presenter:** SONNENSCHNEIN, Andrew (Fermilab)

**Session Classification:** Scaling Up BREAD

Contribution ID: 41

Type: **not specified**

## **The point for a formal collaboration: authorship, funding, organization**

*Friday, 6 October 2023 11:00 (20 minutes)*

**Session Classification:** Collaboration Forming

Contribution ID: 42

Type: **not specified**

## **Brainstorming / Discussion**

*Friday, 6 October 2023 11:20 (40 minutes)*

**Session Classification:** Collaboration Forming

Contribution ID: 44

Type: **not specified**

## Collider signatures of axions/axinos

*Thursday, 5 October 2023 16:25 (20 minutes)*

**Presenter:** HOSHINO, Gabe (University of Chicago)

**Session Classification:** Fun Physics

Contribution ID: 46

Type: **not specified**

## Group Photo

*Thursday, 5 October 2023 11:45 (20 minutes)*

**Session Classification:** Lunch

Contribution ID: 47

Type: **not specified**

## **On-Chip Fourier Transform Spectrometer**

*Wednesday, 4 October 2023 11:45 (20 minutes)*

<https://arxiv.org/abs/2111.06558>

**Presenter:** BASU THAKUR, Ritoban (California Institute of Technology)

**Session Classification:** GHz to THz Detectors

Contribution ID: 48

Type: **not specified**

## **Long-Wavelength SNSPDs (likely remote)**

*Friday, 6 October 2023 09:00 (20 minutes)*

**Presenter:** PEÑA, Cristián (Fermilab)

**Session Classification:** InfraBREAD & Optical Detection

Contribution ID: 50

Type: **not specified**

## **InfraBREAD sensitivity based on reflector characterization and SNSPD tests**

*Friday, 6 October 2023 10:10 (10 minutes)*

**Presenter:** BROWNING, Robert C.

**Session Classification:** InfraBREAD & Optical Detection

Contribution ID: 51

Type: **not specified**

## Dielectric Enhancement: MADMAX (remote)

*Thursday, 5 October 2023 10:25 (20 minutes)*

- How to calibrate a dielectric haloscope
- A first calibrated open booster
- Plans for a first dark photon measurement at UHamburg with GigaBREAD board

**Presenter:** EGGE, Jacob Mathias

**Session Classification:** Enhancing the signal in BREAD: Array, Dielectrics, Resonances

Contribution ID: 52

Type: **not specified**

## **Dielectric Enhancement: Review of Dielectrics**

*Thursday, 5 October 2023 10:10 (10 minutes)*

**Presenter:** SONNENSCHNEIN, Andrew (Fermilab)

**Session Classification:** Enhancing the signal in BREAD: Array, Dielectrics, Resonances

Contribution ID: 53

Type: **not specified**

## Discussion Time

*Thursday, 5 October 2023 11:15 (30 minutes)*

**Session Classification:** Enhancing the signal in BREAD: Array, Dielectrics, Resonances

Contribution ID: 54

Type: **not specified**

## Discussion Time

*Friday, 6 October 2023 10:25 (20 minutes)*

**Session Classification:** InfraBREAD & Optical Detection

Contribution ID: 55

Type: **not specified**

## **How to detect axion dark matter ... for real: Towards a mutli-M\$ axion facility**

*Thursday, 5 October 2023 14:45 (20 minutes)*

**Presenter:** CHOU, Aaron (Fermilab)

**Session Classification:** Scaling Up BREAD

Contribution ID: 57

Type: **not specified**

## **Optical Single Photon Detection with Skipper-CCDs**

*Thursday, 5 October 2023 13:20 (20 minutes)*

**Presenter:** CERVANTES VERGARA, Brenda Aurea

**Session Classification:** InfraBREAD & Optical Detection

Contribution ID: 58

Type: **not specified**

## Discussion Time

*Thursday, 5 October 2023 13:45 (15 minutes)*

**Session Classification:** InfraBREAD & Optical Detection