## ECFA Detector R&D Roadmap Symposium of Task Force 5 Quantum and Emerging Technologies

**Report of Contributions** 

Introduction

Contribution ID: 1

Type: not specified

### Introduction

Monday 12 April 2021 09:00 (15 minutes)

**Presenters:** MARCEL, Demarteau (ORNL); DOSER, Michael (CERN); ALLPORT, Philip Patrick (University of Birmingham (UK))

EDM searches & tests of fundam ....

Contribution ID: 2

Type: not specified

### EDM searches & tests of fundamental symmetries

Monday 12 April 2021 09:15 (30 minutes)

**Presenter:** FIERLINGER, Peter (TUM)

Session Classification: Science targets - Overview and Landscape

Tests of QM [wavefunction colla ···

Contribution ID: 3

Type: not specified

# Tests of QM [wavefunction collapse, size effects, temporal separation, decoherence]

Monday 12 April 2021 09:45 (30 minutes)

**Presenter:** BASSI, Angelo (Department of Physics - University of Trieste) **Session Classification:** Science targets - Overview and Landscape

Multisensor and networked detec  $\,\cdots\,$ 

Contribution ID: 4

Type: not specified

#### Multisensor and networked detection

Monday 12 April 2021 10:15 (30 minutes)

**Presenter:** BARONTINI, Giovanni (Birmingham)

Session Classification: Science targets - Overview and Landscape

Axion and other DM, non-DM  $\cdots$ 

Contribution ID: 5

Type: not specified

## Axion and other DM, non-DM Ultra-light particle searches

Monday 12 April 2021 10:45 (30 minutes)

**Presenter:** ARVANITAKI, Mina (Perimeter Institute)

**Session Classification:** Science targets - Overview and Landscape

Quantum-limited Metrology with …

Contribution ID: 6

Type: not specified

### **Quantum-limited Metrology with Optical Clocks**

Monday 12 April 2021 12:30 (30 minutes)

**Presenter:** HUME, David (NIST)

Session Classification: Experimental methods and techniques - Overview and Lanscape

Novel ionic, atomic and molecular  $\cdots$ 

Contribution ID: 7

Type: not specified

## Novel ionic, atomic and molecular systems [RaF, tests in multiatomic molecules, exotic atoms]

Monday 12 April 2021 12:00 (30 minutes)

Presenter: SAFRONOVA, Marianna (Univ. Delaware)

Session Classification: Experimental methods and techniques - Overview and Lanscape

Superconducting platforms for se ...

Contribution ID: 8

Type: not specified

# Superconducting platforms for sensing and computing

Monday 12 April 2021 14:30 (30 minutes)

**Presenter:** ROMANENKO, Alexander (FNAL)

High sensitivity superconducting ···

Contribution ID: 9

Type: not specified

# High sensitivity superconducting cryogenic electronics, low noise amplifiers, TES

Monday 12 April 2021 14:00 (30 minutes)

Presenter: WITHINGTON, Stafford (Cambridge)

Quantum Acceleration of Axion …

Contribution ID: 10

Type: not specified

### **Quantum Acceleration of Axion Detection**

Monday 12 April 2021 15:00 (30 minutes)

Presenter: IRWIN, Kent (Stanford)

Mechanical / optomechanical det  $\cdots$ 

Contribution ID: 11

Type: not specified

### **Mechanical / optomechanical detectors**

Monday 12 April 2021 15:30 (30 minutes)

Presenter: GERACI, Andrew (Northwestern)

Spin-based techniques, NV- ···

Contribution ID: 12

Type: not specified

#### Spin-based techniques, NV-diamonds, Magnetometry

Monday 12 April 2021 11:30 (30 minutes)

**Presenter:** BUDKER, Dima (Mainz)

Session Classification: Experimental methods and techniques - Overview and Lanscape

Low energy techniques for neutri ...

Contribution ID: 13

Type: not specified

### Low energy techniques for neutrinos and axions

Monday 12 April 2021 16:15 (30 minutes)

Presenter: GASTALDO, Loredana (KIP)

Atom interferometry at large scal  $\cdots$ 

Contribution ID: 14

Type: not specified

## Atom interferometry at large scales (ground based, space based)

Monday 12 April 2021 17:15 (30 minutes)

Presenter: HOGAN, Jason (Stanford)

Discussion session

Contribution ID: 15

Type: not specified

## **Discussion session**

Monday 12 April 2021 17:45 (45 minutes)

• Technical challenges and barriers

• Scaling up from table-top systems

• Applying quantum technologies to high energy detectors

Quantum scintillation materials

Contribution ID: 16

Type: not specified

### **Quantum scintillation materials**

Monday 12 April 2021 16:45 (30 minutes)

**Presenter:** AUFFRAY HILLEMANS, Etiennette (CERN)