

Quantum Sensors for Fundamental Physics

Report of Contributions

Contribution ID: 1

Type: **not specified**

Welcome & Purpose of Meeting

Tuesday 16 October 2018 09:00 (15 minutes)

Presenter: SHIPSEY, Ian (University of Oxford (GB))

Contribution ID: 2

Type: **not specified**

Scientific Motivation Overview

Tuesday 16 October 2018 09:15 (45 minutes)

Presenter: VILLADORO, Giovanni (Abdus Salam Int. Cent. Theor. Phys. (IT))

Contribution ID: 3

Type: **not specified**

Quantum Features Exploitable in Table Top Fundamental Physics (incl. Superposition, Entanglement, Squeezing Back Action Evasion & more)

Tuesday 16 October 2018 10:00 (45 minutes)

Presenter: BOSE, Sougato (UCL)

Contribution ID: 4

Type: **not specified**

Coffee

Tuesday 16 October 2018 10:45 (30 minutes)

Contribution ID: 5

Type: **not specified**

Harnessing quantum technologies in the search for dark matter

Tuesday 16 October 2018 17:30 (45 minutes)

Presenter: LEHNERT, Konrad (JILA)

Contribution ID: 6

Type: **not specified**

UK National Quantum Technology Hub in Sensors and Metrology

Tuesday 16 October 2018 12:00 (45 minutes)

Presenter: BONGS, Kai (U. Birmingham & NQHS)

Contribution ID: 7

Type: **not specified**

Extra Discussion

Tuesday 16 October 2018 12:45 (15 minutes)

Contribution ID: 8

Type: **not specified**

Lunch

Tuesday 16 October 2018 13:00 (50 minutes)

Contribution ID: 9

Type: **not specified**

Atom Interferometry

Tuesday 16 October 2018 14:45 (45 minutes)

Presenter: HOGAN, Jason (Stanford)

Contribution ID: **10**

Type: **not specified**

Trapped Ions, Atomic clocks, fundamental constants.

Tuesday 16 October 2018 16:00 (45 minutes)

Presenter: HUME, David (NIST)

Contribution ID: **11**

Type: **not specified**

Coffee

Tuesday 16 October 2018 15:30 (30 minutes)

Contribution ID: 12

Type: **not specified**

Magnetic Resonance and Atomic Clocks

Tuesday 16 October 2018 16:45 (45 minutes)

Presenter: STADNIK, Yevgeny (Mainz)

Contribution ID: 13

Type: **not specified**

Photon-Number-Resolving Imagers and Detectors Based on Superconducting Nanowire

Tuesday 16 October 2018 11:15 (45 minutes)

Presenter: BERGGREN, Karl (MIT)

Contribution ID: 14

Type: **not specified**

Low Energy Tests of the Standard Model

Tuesday 16 October 2018 14:00 (45 minutes)

Presenters: GABRIELSE, Gerald (Harvard University (US)); GABRIELSE, Gerald (Harvard University)

Contribution ID: 15

Type: **not specified**

The FNAL Quantum Program

Tuesday 16 October 2018 18:15 (45 minutes)

Presenter: SPENTZOURIS, Panagiotis (Fermilab)

Contribution ID: **16**

Type: **not specified**

Dinner (self-organized)

Tuesday 16 October 2018 19:00 (1 hour)

Contribution ID: 17

Type: **not specified**

Precision experiments with phonons, photons and spins to test Lorentz Invariance and to Detect Dark Matter and High Frequency Gravitational Waves

Wednesday 17 October 2018 09:00 (35 minutes)

Presenter: TOBAR, Michael (U Western Australia)

Contribution ID: **18**

Type: **not specified**

National Physical Laboratory Program in Quantum Sensors for Fundamental Physics

Wednesday 17 October 2018 09:35 (35 minutes)

Presenter: GILL, Patrick (NPL)

Contribution ID: **19**

Type: **not specified**

Ion Traps 1

Wednesday 17 October 2018 11:10 (25 minutes)

Presenter: LUCAS, David (Oxford)

Contribution ID: 20

Type: **not specified**

beyond-Standard-Model physics with ion trap type methods

Wednesday 17 October 2018 11:35 (20 minutes)

Presenter: STEANE, Andrew (Oxford)

Contribution ID: 21

Type: **not specified**

alpha-dot measurement with an ion Trap

Wednesday 17 October 2018 11:55 (20 minutes)

Presenter: GODUN, Rachel (NPL)

Contribution ID: 22

Type: **not specified**

Coffee

Wednesday 17 October 2018 10:50 (20 minutes)

Contribution ID: 23

Type: **not specified**

Quantum Sensors Programme at Cambridge

Wednesday 17 October 2018 12:15 (20 minutes)

Presenter: WITHINGTON, Stafford (Cambridge)

Contribution ID: 24

Type: **not specified**

Atom Interferometry in the UK & MAGIS-100

Wednesday 17 October 2018 13:45 (25 minutes)

Presenter: COLEMAN, Jon (University of Liverpool)

Contribution ID: 25

Type: **not specified**

The Atom Interferometer Observatory Network

Wednesday 17 October 2018 14:10 (15 minutes)

Presenter: BUCHMULLER, Oliver (Imperial College (GB))

Contribution ID: 26

Type: **not specified**

Levitated quantum optomechanics for fundamental physics

Wednesday 17 October 2018 14:25 (20 minutes)

Presenter: BARKER, Peter (UCL)

Contribution ID: 27

Type: **not specified**

Lunch

Wednesday 17 October 2018 12:55 (50 minutes)

Contribution ID: 28

Type: **not specified**

tabletop quantum sensing experiments with NV centres in diamond including with levitated nanodiamond

Wednesday 17 October 2018 14:45 (25 minutes)

Presenter: MORLEY, Gavin (Warwick)

Contribution ID: 29

Type: **not specified**

Quantum Behavior of Mechanical Structures and the application to fundamental physics

Wednesday 17 October 2018 15:10 (25 minutes)

Presenter: VANNER, Michael (Imperial)

Contribution ID: **30**

Type: **not specified**

Resonant searches for Axions and other ultralight dark matter

Wednesday 17 October 2018 15:55 (30 minutes)

Presenter: DAW, Edward (The University of Sheffield)

Contribution ID: 31

Type: **not specified**

Exploring ultra light to sub-MeV dark matter with atomic clocks and co-magnetometers

Wednesday 17 October 2018 16:55 (15 minutes)

Presenter: BLAS TEMINO, Diego (CERN)

Contribution ID: 32

Type: **not specified**

quantum simulators of fundamental physics

Wednesday 17 October 2018 17:10 (15 minutes)

Presenter: WEINFURTNER, Silke (Nottingham)

Contribution ID: 33

Type: **not specified**

Superconducting Qubits

Wednesday 17 October 2018 16:25 (30 minutes)

Presenter: LEEK, Peter

Contribution ID: 34

Type: **not specified**

The Quantum Programme (Liam Blackwell EPSRC) The SPF EoI themes (Jason Green STFC)

Wednesday 17 October 2018 10:10 (40 minutes)

Contribution ID: 35

Type: **not specified**

Quantum Techniques in Advanced Laser Interferometric Gravity Wave Detectors

Wednesday 17 October 2018 12:35 (20 minutes)

Presenter: MIAO, Haixing (U. Birmingham)

Contribution ID: **36**

Type: **not specified**

Coffee

Wednesday 17 October 2018 15:35 (20 minutes)

Presenter: TOPP-JORGENSEN, Stig