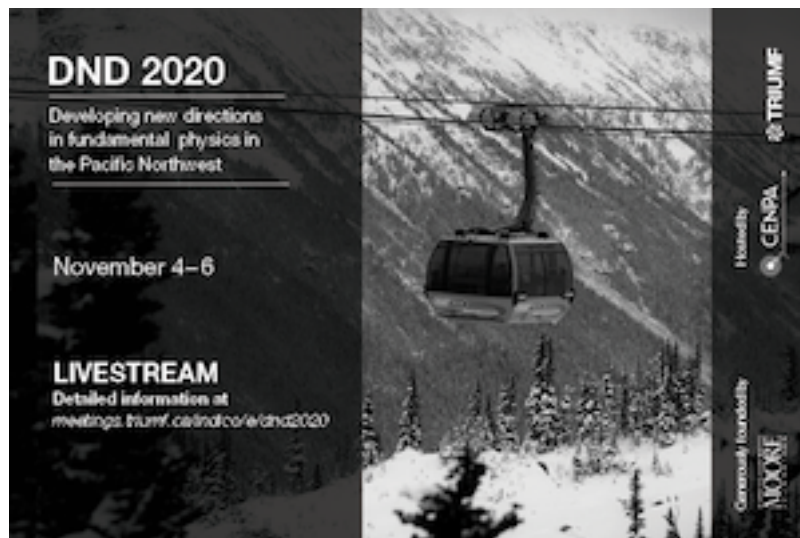


Developing New Directions in Fundamental Physics (DND) 2020



Report of Contributions

Contribution ID: 0

Type: **not specified**

Probing the Dark Sector with Atoms and Nuclei

Wednesday, 4 November 2020 08:30 (30 minutes)

Presenter: RAJENDRAN, Surjeet (Johns Hopkins University)

Session Classification: Plenary

Contribution ID: 1

Type: **not specified**

Experimental Perspectives on Fundamental Physics with Molecules

Wednesday, 4 November 2020 11:40 (30 minutes)

Presenter: HUTZLER, Nicholas (Caltech)

Session Classification: Plenary

Contribution ID: 2

Type: **not specified**

TRIUMF Accelerator Capabilities, Present and Future

Wednesday, 4 November 2020 09:10 (30 minutes)

Presenter: Prof. KESTER, Oliver (TRIUMF)

Session Classification: Plenary

Contribution ID: 3

Type: **not specified**

The Physics Program at TRIUMF

Wednesday, 4 November 2020 09:50 (30 minutes)

An overview is given of the physics portfolio for the on-site and off-site program at TRIUMF.

Presenter: Prof. DILLING, Jens (TRIUMF)

Session Classification: Plenary

Contribution ID: 4

Type: **not specified**

Fundamental physics with molecules: From electric dipole moments to dark matter candidates

Wednesday, 4 November 2020 11:00 (30 minutes)

Presenter: BERGER, Robert (Philipps-Universität Marburg)

Session Classification: Plenary

Contribution ID: 5

Type: **not specified**

Exploring Flavor Physics with Pions and Kaons

Wednesday, 4 November 2020 14:00 (30 minutes)

Presenter: BRYMAN, Douglas (TRIUMF/UBC)

Session Classification: Plenary

Contribution ID: 6

Type: **not specified**

Tests of lepton flavor universality and CKM unitarity

Wednesday, 4 November 2020 13:20 (30 minutes)

Presenter: HOFERICHTER, Martin (Universität Bern)

Session Classification: Plenary

Contribution ID: 7

Type: **not specified**

EDM prospects: experiments and interpretation

Wednesday, 4 November 2020 15:10 (30 minutes)

Presenter: CHUPP, Tim (University of Michigan)

Session Classification: Plenary

Contribution ID: 8

Type: **not specified**

Beyond the Standard Model Across the Spectra

Wednesday, 4 November 2020 15:50 (30 minutes)

Presenter: BARYAKHTAR, Masha (University of Washington/NYU)

Session Classification: Plenary

Contribution ID: 9

Type: **not specified**

The physics of lepton flavor universality and CKM unitarity

Thursday, 5 November 2020 09:00 (30 minutes)

Presenter: CIRIGLIANO, Vincenzo (Los Alamos National Laboratory)

Session Classification: WG: Pions, muons, ...

Contribution ID: **10**

Type: **not specified**

The MEG II experiment and a new idea for the precision test on LUV with the LXe detector

Thursday, 5 November 2020 09:30 (30 minutes)

Primary author: Dr IWAMOTO, Toshiyuki (The University of Tokyo)

Presenter: Dr IWAMOTO, Toshiyuki (The University of Tokyo)

Session Classification: WG: Pions, muons, ...

Contribution ID: 11

Type: **not specified**

Fast silicon detector technologies for 4D tracking in future HEP experiments

Thursday, 5 November 2020 10:00 (30 minutes)

Primary author: Dr MAZZA, Simone Michele (UC Santa Cruz)

Presenter: Dr MAZZA, Simone Michele (UC Santa Cruz)

Session Classification: WG: Pions, muons, ...

Contribution ID: 12

Type: **not specified**

Discussion

Thursday, 5 November 2020 10:30 (15 minutes)

Session Classification: WG: Pions, muons, ...

Contribution ID: 13

Type: **not specified**

Lessons learned from the PiBeta and PEN experiments

Thursday, 5 November 2020 11:00 (30 minutes)

Primary author: Prof. POCANIC, Dinko (University of Virginia)

Presenter: Prof. POCANIC, Dinko (University of Virginia)

Session Classification: WG: Pions, muons, ...

Contribution ID: 14

Type: **not specified**

Lessons learned from PIENU

Thursday, 5 November 2020 11:30 (30 minutes)

Primary author: Dr TRISTAN, Sullivan (University of Victoria)

Presenter: Dr TRISTAN, Sullivan (University of Victoria)

Session Classification: WG: Pions, muons, ...

Contribution ID: 15

Type: **not specified**

Pion and muon beams at PSI, performance and plans

Thursday, 5 November 2020 12:00 (30 minutes)

Primary author: KNECHT, Andreas (Paul Scherrer Institut)

Presenter: KNECHT, Andreas (Paul Scherrer Institut)

Session Classification: WG: Pions, muons, ...

Contribution ID: **16**

Type: **not specified**

Discussion

Thursday, 5 November 2020 12:30 (15 minutes)

Session Classification: WG: Pions, muons, ...

Contribution ID: 19

Type: **not specified**

Beta Decay overview and future

Thursday, 5 November 2020 14:30 (30 minutes)

Presenter: HAYEN, Leendert (North Carolina St.)

Session Classification: WG: New Physics with Radioactives

Contribution ID: 20

Type: **not specified**

Fierz term from Cyclotron Resonance Electron Spectroscopy

Thursday, 5 November 2020 15:00 (30 minutes)

Presenter: GRANER, Brent (University of Washington)

Session Classification: WG: New Physics with Radioactives

Contribution ID: 21

Type: **not specified**

Superconducting Quantum Sensors and Tests of Quantum Mechanics

Thursday, 5 November 2020 14:00 (20 minutes)

Presenter: Dr CHEN, Weijian (Washington University in St Louis)

Session Classification: WG: New Technologies and Techniques

Contribution ID: 22

Type: **not specified**

Tabletop experiments for quantum gravity

Thursday, 5 November 2020 14:30 (20 minutes)

Presenter: Dr CARNEY, Dan (University of Maryland/Fermilab)

Session Classification: WG: New Technologies and Techniques

Contribution ID: 23

Type: **not specified**

Atomic clocks for fundamental physics

Thursday, 5 November 2020 15:00 (20 minutes)

Presenter: Dr YE, Jun (JILA/NIST/University of Colorado)

Session Classification: WG: New Technologies and Techniques

Contribution ID: 24

Type: **not specified**

Dark matter searches with accelerometers

Thursday, 5 November 2020 15:50 (20 minutes)

Presenter: Prof. GUNDLACH, Jens (University of Washington)

Session Classification: WG: New Technologies and Techniques

Contribution ID: 25

Type: **not specified**

Atom Interferometry for Fundamental Physics

Thursday, 5 November 2020 16:20 (20 minutes)

Presenter: Dr PANDA, Cristian (University of California Berkeley)

Session Classification: WG: New Technologies and Techniques

Contribution ID: 26

Type: **not specified**

Laboratory neutrino mass measurements

Thursday, 5 November 2020 16:50 (20 minutes)

Presenter: Dr NOVITSKI, Elise (Center for Experimental Nuclear Physics and Astrophysics, University of Washington)

Session Classification: WG: New Technologies and Techniques

Contribution ID: 27

Type: **not specified**

Beyond Standard Model Neutrino Studies with Rare Isotopes in Quantum Sensors

Thursday, 5 November 2020 15:50 (30 minutes)

Presenter: LEACH, Kyle (Colorado School of Mines)

Session Classification: WG: New Physics with Radioactives

Contribution ID: 28

Type: **not specified**

New techniques for precision measurements on simple atoms/molecules

Thursday, 5 November 2020 17:20 (10 minutes)

Presenter: Dr FUJIWARA, Makoto (TRIUMF)

Session Classification: WG: New Technologies and Techniques

Contribution ID: 29

Type: **not specified**

Additional Discussion Time

Thursday, 5 November 2020 17:40 (20 minutes)

Session Classification: WG: New Technologies and Techniques

Contribution ID: 30

Type: **not specified**

Generalized King linearity and new physics searches with isotope shifts

Thursday, 5 November 2020 16:20 (30 minutes)

Presenter: BERENGUT, Julian (University of New South Wales)

Session Classification: WG: New Physics with Radioactives

Contribution ID: **31**

Type: **not specified**

Summary and Outlook

Friday, 6 November 2020 09:00 (20 minutes)

Presenters: Dr RITZ, Adam (University of Victoria); Dr FRANKE, Beatrice (TRIUMF)

Session Classification: WG: New ideas to probe fundamental physics with nucleons and molecules (EDMs, precision measurements, etc.)

Contribution ID: 32

Type: **not specified**

Summary and Outlook

Friday, 6 November 2020 10:00 (20 minutes)

Presenter: Prof. RYBKA, Gray (University of Washington)

Session Classification: WG: New Technologies and Techniques

Contribution ID: 33

Type: **not specified**

Summary and Outlook

Friday, 6 November 2020 09:30 (20 minutes)

Presenters: Prof. HERTZOG, David (University of Washington); Prof. KAMMEL, Peter (UW and CENPA, Seattle)

Session Classification: WG: Pions, muons, ...

Contribution ID: 34

Type: **not specified**

Summary and Outlook

Friday, 6 November 2020 11:00 (20 minutes)

Presenters: GARCIA, Alejandro (University of Washington); BEHR, John (TRIUMF)

Session Classification: WG: New Physics with Radioactives

Contribution ID: 35

Type: **not specified**

Summary and Outlook

Friday, 6 November 2020 11:30 (20 minutes)

Presenter: MCKEEN, David (TRIUMF)

Session Classification: WG: E-Linac Opportunities

Contribution ID: **36**

Type: **not specified**

Electron beams and new physics

Thursday, 5 November 2020 14:00 (30 minutes)

Presenter: BATELL, Brian (University of Pittsburgh)

Session Classification: WG: E-Linac Opportunities

Contribution ID: 37

Type: **not specified**

Electron beam dump experiments

Thursday, 5 November 2020 14:30 (30 minutes)

Presenter: Dr DORIA, Luca (TRIUMF)

Session Classification: WG: E-Linac Opportunities

Contribution ID: **38**

Type: **not specified**

The DarkLight experiment

Thursday, 5 November 2020 16:00 (30 minutes)

Presenter: BERNAUER, Jan (Stony Brook University)

Session Classification: WG: E-Linac Opportunities

Contribution ID: 39

Type: **not specified**

Electron beams and missing momentum

Thursday, 5 November 2020 16:30 (30 minutes)

Presenter: BLINOV, Nikita (Fermilab)

Session Classification: WG: E-Linac Opportunities

Contribution ID: 40

Type: **not specified**

TBA

Presenter: CAIRNCROSS, Will (Department of Chemistry and Chemical Biology, Harvard University)

Contribution ID: 41

Type: **not specified**

Assembling and disassembling molecules for quantum science and precision measurement

Thursday, 5 November 2020 09:45 (20 minutes)

Presenter: Dr CAIRNCROSS, Will (Department of Chemistry and Chemical Biology, Harvard University)

Session Classification: WG: New ideas to probe fundamental physics with nucleons and molecules (EDMs, precision measurements, etc.)

Contribution ID: 42

Type: **not specified**

Introduction

Thursday, 5 November 2020 09:00 (10 minutes)

Presenter: RITZ, Adam (University of Victoria)

Session Classification: WG: New ideas to probe fundamental physics with nucleons and molecules (EDMs, precision measurements, etc.)

Contribution ID: 43

Type: **not specified**

EDMs and molecules: state of the art and prospects for rapid improvements in hadronic and leptonic CP violation

Thursday, 5 November 2020 09:10 (35 minutes)

Presenter: Prof. DEMILLE, Dave

Session Classification: WG: New ideas to probe fundamental physics with nucleons and molecules (EDMs, precision measurements, etc.)

Contribution ID: 44

Type: **not specified**

Discussion

Thursday, 5 November 2020 10:25 (30 minutes)

Session Classification: WG: New ideas to probe fundamental physics with nucleons and molecules (EDMs, precision measurements, etc.)

Contribution ID: 45

Type: **not specified**

Extending the reach of fundamental symmetries research with beta decay and measurements with polarized ultracold neutrons

Thursday, 5 November 2020 11:20 (35 minutes)

Presenter: Prof. YOUNG, Albert

Session Classification: WG: New ideas to probe fundamental physics with nucleons and molecules (EDMs, precision measurements, etc.)

Contribution ID: 46

Type: **not specified**

Probing for BSM physics through Precision Measurements of the Neutron Lifetime and the Neutron Electric Dipole Moment

Thursday, 5 November 2020 11:55 (35 minutes)

Presenter: Prof. LIU, Chen-Yu

Session Classification: WG: New ideas to probe fundamental physics with nucleons and molecules (EDMs, precision measurements, etc.)

Contribution ID: 47

Type: **not specified**

Discussion

Thursday, 5 November 2020 12:30 (30 minutes)

Primary author: Prof. MARTIN, Jeffery (The University of Winnipeg)

Session Classification: WG: New ideas to probe fundamental physics with nucleons and molecules (EDMs, precision measurements, etc.)

Contribution ID: 48

Type: **not specified**

Probing Physics Beyond the Standard Model with the JILA eEDM Experiment

Thursday, 5 November 2020 10:05 (20 minutes)

Presenter: NG, Kia Boon (JILA, University of Colorado, Boulder)

Session Classification: WG: New ideas to probe fundamental physics with nucleons and molecules (EDMs, precision measurements, etc.)

Contribution ID: 49

Type: **not specified**

Novel methods required to link the RIB and AMO techniques for future BSM physics studies

Thursday, 5 November 2020 14:00 (30 minutes)

Presenter: ETTENAUER, Stephan (CERN)

Session Classification: WG: New Physics with Radioactives

Contribution ID: 50

Type: **not specified**

Outlook and closing remarks

Friday, 6 November 2020 12:00 (15 minutes)

Presenter: Prof. DILLING, Jens (TRIUMF)

Session Classification: Closing Remarks & Future Charge