### Oslo Winter School "Standard Model, Quantum Chromodynamics, Heavy Ion Collisions"

**Report of Contributions** 

Opening Talk

Contribution ID: 1 Type: not specified

### **Opening Talk**

Monday, 30 December 2019 17:30 (30 minutes)

Primary author: BRAVINA, Larisa (University of Oslo (NO))

Presenter: BRAVINA, Larisa (University of Oslo (NO))

Contribution ID: 2 Type: not specified

### **Modern Cosmology**

Monday, 30 December 2019 18:00 (1 hour)

Primary author: Prof. VILCHINSKII, Stanislav (National Taras Shevchenko Univ. of Kyiv (UA))

Presenter: Prof. VILCHINSKII, Stanislav (National Taras Shevchenko Univ. of Kyiv (UA))

Contribution ID: 3 Type: not specified

### **Modern Cosmology**

Tuesday, 31 December 2019 10:00 (1 hour)

Primary author: Prof. VILCHINSKII, Stanislav (National Taras Shevchenko Univ. of Kyiv (UA))

Presenter: Prof. VILCHINSKII, Stanislav (National Taras Shevchenko Univ. of Kyiv (UA))

Contribution ID: 4 Type: **not specified** 

### **Modern Cosmology**

Thursday, 2 January 2020 08:30 (1 hour)

Primary author: VILCHINSKII, Stanislav (National Taras Shevchenko Univ. of Kyiv (UA))

Presenter: VILCHINSKII, Stanislav (National Taras Shevchenko Univ. of Kyiv (UA))

Contribution ID: 5 Type: **not specified** 

### Flavor physics and CP violation

Tuesday, 31 December 2019 09:00 (1 hour)

**Primary author:** Prof. VYSOTSKY, Mikhail

Presenter: Prof. VYSOTSKY, Mikhail

Contribution ID: 6 Type: not specified

### Flavor physics and CP violation

Thursday, 2 January 2020 09:30 (1 hour)

**Primary author:** Prof. VYSOTSKY, Mikhail

Presenter: Prof. VYSOTSKY, Mikhail

Contribution ID: 7 Type: **not specified** 

### Relativistic analog of the Van der Waals equation of state

Tuesday, 31 December 2019 11:00 (1 hour)

Primary author: BUGAEV, Kyrill (Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine)

Presenter: BUGAEV, Kyrill (Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine)

Contribution ID: 8 Type: **not specified** 

### Problem of Surface Entropy, Exact Solution of Hills and Dales Model and Surface Tension of Color Tube

Thursday, 9 January 2020 08:30 (1 hour)

Primary author: BUGAEV, Kyrill (Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine)

Presenter: BUGAEV, Kyrill (Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine)

Contribution ID: 9 Type: not specified

# Finite volume analog of nuclear liquid-gas phase transition the constrained statistical multifragmentation model

Saturday, 11 January 2020 08:30 (1 hour)

Primary author: BUGAEV, Kyrill (Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine)

**Presenter:** BUGAEV, Kyrill (Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine)

Contribution ID: 10 Type: not specified

## Quark gluon bags of finite width and the estimates of their life-time

Wednesday, 8 January 2020 08:30 (1 hour)

**Primary author:** BUGAEV, Kyrill (Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine)

**Presenter:** BUGAEV, Kyrill (Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine)

Contribution ID: 11 Type: not specified

#### **TBA**

Thursday, 2 January 2020 16:30 (1 hour)

Primary author: BRAVINA, Larisa (University of Oslo (NO))

**Presenter:** BRAVINA, Larisa (University of Oslo (NO))

Contribution ID: 12 Type: not specified

### Conference Talk: Physics opportunities and expertimental challenges (I)

Friday, 3 January 2020 08:30 (45 minutes)

Primary author: KADO, Marumi (Sapienza Universita e INFN, Roma I (IT))

**Presenter:** KADO, Marumi (Sapienza Universita e INFN, Roma I (IT))

Contribution ID: 13 Type: not specified

### **Conference Talk: Feebly interacting particles**

Friday, 3 January 2020 09:15 (45 minutes)

Conference Talk: Feebly interacti  $\, \cdots \,$ 

**Primary author:** Prof. RUCHAYSKIY, Oleg (University of Copenhagen (DK))

Presenter: Prof. RUCHAYSKIY, Oleg (University of Copenhagen (DK))

Contribution ID: 14 Type: not specified

### Conference Talk: Physics opportunities and expertimental challenges (II)

Friday, 3 January 2020 15:00 (45 minutes)

Primary author: KADO, Marumi (Sapienza Universita e INFN, Roma I (IT))

**Presenter:** KADO, Marumi (Sapienza Universita e INFN, Roma I (IT))

Contribution ID: 15 Type: not specified

#### **Conference Talk: Gravitational waves (I)**

Friday, 3 January 2020 15:45 (45 minutes)

**Primary author:** NIELSEN, Alex (University of Stavanger)

**Presenter:** NIELSEN, Alex (University of Stavanger)

Contribution ID: 16 Type: not specified

#### **Conference Talk: Gravitational waves (II)**

Saturday, 4 January 2020 09:15 (45 minutes)

Primary author: NIELSEN, Alex (University of Stavanger)

**Presenter:** NIELSEN, Alex (University of Stavanger)

Contribution ID: 17 Type: not specified

# Conference Talk: Analytical reinterpretation of ATLAS dark matter mediator searches with final-state jets

Friday, 3 January 2020 17:20 (20 minutes)

Conference Talk: Analytical rein  $\,\cdots\,$ 

**Primary author:** CORRIGAN, Eric Edward (Lund University (SE))

**Presenter:** CORRIGAN, Eric Edward (Lund University (SE))

Contribution ID: 18 Type: not specified

### Conference Talk: Searches for charged Higgs bosons at CMS

Friday, 3 January 2020 17:40 (20 minutes)

Primary author: LAURILA, Santeri Henrikki (Helsinki Institute of Physics (FI))

Presenter: LAURILA, Santeri Henrikki (Helsinki Institute of Physics (FI))

Contribution ID: 19 Type: not specified

### Conference Talk: Dirac vs. Majorana HNLs (and their oscillations) at SHiP

Friday, 3 January 2020 20:30 (20 minutes)

Primary author: TASTET, Jean-Loup (University of Copenhagen (DK))

**Presenter:** TASTET, Jean-Loup (University of Copenhagen (DK))

Contribution ID: 20 Type: not specified

# Conference Talk: Rethinking searches for new physics at LHC

Friday, 3 January 2020 20:50 (20 minutes)

**Primary author:** DE ALMEIDA DIAS, Flavia (University of Copenhagen (DK))

Presenter: DE ALMEIDA DIAS, Flavia (University of Copenhagen (DK))

Contribution ID: 21 Type: not specified

### Conference Talk: QCD at the high-energy frontier

Friday, 3 January 2020 21:10 (20 minutes)

Conference Talk: QCD at the  $\cdots$ 

**Primary author:** LAPPI, Tuomas (University of Jyvaskyla)

Presenter: LAPPI, Tuomas (University of Jyvaskyla)

Contribution ID: 22 Type: not specified

#### **Conference Talk: Neutrino experiments (I)**

Saturday, 4 January 2020 08:30 (45 minutes)

Conference Talk: Neutrino exper  $\,\cdots$ 

Primary author: DI LODOVICO, Francesca (University of London (GB))

Presenter: DI LODOVICO, Francesca (University of London (GB))

Contribution ID: 23 Type: not specified

#### Conference Talk: Neutrino experiments (II)

Saturday, 4 January 2020 15:00 (44 minutes)

Conference Talk: Neutrino exper  $\,\cdots$ 

Primary author: DI LODOVICO, Francesca (University of London (GB))

Presenter: DI LODOVICO, Francesca (University of London (GB))

Contribution ID: 24 Type: not specified

### Conference Talk: Discovery potential in flavour physics

Saturday, 4 January 2020 15:45 (45 minutes)

**Primary author:** BONA, Marcella (Queen Mary University of London (UK))

Presenter: BONA, Marcella (Queen Mary University of London (UK))

Contribution ID: 25

# Conference Talk: Hadrons in gravitational field, shear forces and viscosity

Saturday, 4 January 2020 17:00 (20 minutes)

Conference Talk: Hadrons in gra  $\,\cdots$ 

Type: not specified

Primary author: TERYAEV, Oleg (Joint Institute for Nuclear Research (RU))

**Presenter:** TERYAEV, Oleg (Joint Institute for Nuclear Research (RU))

Contribution ID: 26 Type: not specified

#### How to discover a new Standard Model

Saturday, 4 January 2020 17:30 (1 hour)

**Primary author:** RUCHAYSKIY, Oleg (University of Copenhagen (DK))

**Presenter:** RUCHAYSKIY, Oleg (University of Copenhagen (DK))

Contribution ID: 27 Type: not specified

# Conference Talk: Early equilibration and freeze-out in relativistic heavy ion collisions

Saturday, 4 January 2020 20:30 (20 minutes)

Primary author: ZABRODIN, Evgeny (University of Oslo (NO))

Presenter: ZABRODIN, Evgeny (University of Oslo (NO))

Contribution ID: 28 Type: not specified

### Conference Talk: European strategy: overview on collider physics program

Sunday, 5 January 2020 08:30 (45 minutes)

Primary author: DAM, Mogens (University of Copenhagen (DK))

Presenter: DAM, Mogens (University of Copenhagen (DK))

Contribution ID: 29 Type: not specified

#### Conference Talk: Dark matter searches (I)

Sunday, 5 January 2020 09:15 (45 minutes)

Primary author: BRINGMANN, Torsten (University of Oslo)

Presenter: BRINGMANN, Torsten (University of Oslo)

Contribution ID: 30 Type: not specified

#### **Conference Talk: Dark matter searches (II)**

Monday, 6 January 2020 08:30 (45 minutes)

Primary author: BRINGMANN, Torsten (University of Oslo)

Presenter: BRINGMANN, Torsten (University of Oslo)

Contribution ID: 31 Type: not specified

### Phase diagram of baryon matter in the NJL-like models

Sunday, 5 January 2020 15:30 (1 hour)

**Primary author:** FRIESEN, Alexandra (Joint Institute for Nuclear Research)

Presenter: FRIESEN, Alexandra (Joint Institute for Nuclear Research)

Contribution ID: 32 Type: not specified

#### Particle interaction with matter and detectors

Sunday, 5 January 2020 16:30 (1 hour)

Primary author: NIGMATKULOV, Grigory (National Research Nuclear University MEPhI)

Presenter: NIGMATKULOV, Grigory (National Research Nuclear University MEPhI)

Contribution ID: 33 Type: not specified

# Conference Talk: Quasistable charginos in ultrapheral proton-proton collisions at the LHC

Sunday, 5 January 2020 20:30 (20 minutes)

**Primary author:** Prof. VYSOTSKY, Mikhail

Presenter: Prof. VYSOTSKY, Mikhail

Contribution ID: 34 Type: not specified

#### **Introduction to Dark Matter**

Monday, 6 January 2020 09:30 (1 hour)

Primary author: SOKOLENKO, Anastasia (University of Oslo)

Presenter: SOKOLENKO, Anastasia (University of Oslo)

Contribution ID: 35 Type: not specified

#### **Introduction to Dark Matter**

Wednesday, 8 January 2020 16:30 (1 hour)

Primary author: SOKOLENKO, Anastasia (University of Oslo)

Presenter: SOKOLENKO, Anastasia (University of Oslo)

Contribution ID: 36 Type: not specified

#### **Introduction to Dark Matter**

Friday, 10 January 2020 08:30 (1 hour)

Primary author: SOKOLENKO, Anastasia (University of Oslo)

Presenter: SOKOLENKO, Anastasia (University of Oslo)

Contribution ID: 37 Type: not specified

# Building the Standard Model. Historical and qualitative aspects

Monday, 6 January 2020 16:00 (1 hour)

**Primary author:** Prof. EEG, Jan Olav

**Presenter:** Prof. EEG, Jan Olav

Contribution ID: 38 Type: not specified

### Flavor physics and CP violation

**Primary author:** Prof. VYSOTSKY, Mikhail

**Presenter:** Prof. VYSOTSKY, Mikhail

Contribution ID: 39 Type: not specified

### Phase diagram of baryon matter in the NJL-like models

Monday, 6 January 2020 17:00 (1 hour)

**Primary author:** FRIESEN, Alexandra (Joint Institute for Nuclear Research)

Presenter: FRIESEN, Alexandra (Joint Institute for Nuclear Research)

Contribution ID: 40 Type: not specified

### Spin in hadronic reactions

Monday, 6 January 2020 18:00 (1 hour)

Primary author: TERYAEV, Oleg (Joint Institute for Nuclear Research (RU))

**Presenter:** TERYAEV, Oleg (Joint Institute for Nuclear Research (RU))

Contribution ID: 41 Type: not specified

### **Higher-spin fields**

Wednesday, 8 January 2020 15:30 (1 hour)

**Primary author:** Dr PASCALUTSA, Vladimir (University of Mainz)

**Presenter:** Dr PASCALUTSA, Vladimir (University of Mainz)

Contribution ID: 42 Type: not specified

### **Higher-spin fields**

Thursday, 9 January 2020 15:30 (1 hour)

**Primary author:** PASCALUTSA, Vladimir (University of Mainz)

Presenter: PASCALUTSA, Vladimir (University of Mainz)

Contribution ID: 43 Type: not specified

### **Higher-spin fields**

Friday, 10 January 2020 15:30 (1 hour)

**Primary author:** PASCALUTSA, Vladimir (University of Mainz)

Presenter: PASCALUTSA, Vladimir (University of Mainz)

Contribution ID: 44 Type: **not specified** 

# Building the Standard Model. Historical and qualitative aspects

Wednesday, 8 January 2020 09:30 (1 hour)

**Primary author:** Prof. EEG, Jan Olav

**Presenter:** Prof. EEG, Jan Olav

Contribution ID: 45 Type: not specified

# Building the Standard Model. Historical and qualitative aspects

Thursday, 9 January 2020 09:30 (1 hour)

**Primary author:** Prof. EEG, Jan Olav

**Presenter:** Prof. EEG, Jan Olav

Contribution ID: 46 Type: **not specified** 

### Flavor physics and CP violation

**Primary author:** Prof. VYSOTSKY, Mikhail

**Presenter:** Prof. VYSOTSKY, Mikhail

Contribution ID: 47 Type: **not specified** 

#### **TBA**

**Primary author:** BOIARSKYI, Alexey (Leiden University (NL))

**Presenter:** BOIARSKYI, Alexey (Leiden University (NL))

Contribution ID: 48 Type: **not specified** 

#### **TBA**

**Primary author:** BOIARSKYI, Alexey (Leiden University (NL))

**Presenter:** BOIARSKYI, Alexey (Leiden University (NL))

Contribution ID: 49 Type: not specified

### Spin in heavy-ion collisions

Thursday, 9 January 2020 16:30 (1 hour)

Primary author: TERYAEV, Oleg (Joint Institute for Nuclear Research (RU))

**Presenter:** TERYAEV, Oleg (Joint Institute for Nuclear Research (RU))

Contribution ID: **50** Type: **not specified** 

## Introduction to relativistic heavy-ion physics: experimental overview

Thursday, 9 January 2020 17:30 (1 hour)

Primary author: NIGMATKULOV, Grigory (National Research Nuclear University MEPhI)

Presenter: NIGMATKULOV, Grigory (National Research Nuclear University MEPhI)

Contribution ID: 51 Type: not specified

## Compact stars, equation of state of neutron stars and the first NS-NS merger event

Friday, 10 January 2020 17:30 (1 hour)

**Primary author:** Dr SAGUN, Violetta (University of Coimbra)

**Presenter:** Dr SAGUN, Violetta (University of Coimbra)

Contribution ID: 52 Type: not specified

### Axial anomaly and spin in hadronic and heavy-ion collisions

Friday, 10 January 2020 16:30 (1 hour)

**Primary author:** TERYAEV, Oleg (Joint Institute for Nuclear Research (RU))

**Presenter:** TERYAEV, Oleg (Joint Institute for Nuclear Research (RU))

Type: not specified

Contribution ID: 53

## Compact stars, equation of state of neutron stars and the first NS-NS merger event

Saturday, 11 January 2020 16:30 (1 hour)

**Primary author:** SAGUN, Violetta (University of Coimbra)

**Presenter:** SAGUN, Violetta (University of Coimbra)

Contribution ID: 54 Type: not specified

### Strangeness in Heavy Ion Collisions

Saturday, 11 January 2020 09:30 (1 hour)

Primary author: KABANA, Sonja (Universidad Andres Bello (CL))

Presenter: KABANA, Sonja (Universidad Andres Bello (CL))

Contribution ID: 55 Type: not specified

### Strangeness in Heavy Ion Collisions

Saturday, 11 January 2020 15:30 (1 hour)

Primary author: KABANA, Sonja (Universidad Andres Bello (CL))

Presenter: KABANA, Sonja (Universidad Andres Bello (CL))

Contribution ID: 56 Type: not specified

# Gravity and non-inertial effects in heavy-ion collisions

Wednesday, 8 January 2020 17:30 (1 hour)

Primary author: TERYAEV, Oleg (Joint Institute for Nuclear Research (RU))

**Presenter:** TERYAEV, Oleg (Joint Institute for Nuclear Research (RU))

Contribution ID: 57 Type: not specified

### Correlation femtoscopy in particle and heavy-ion physics

Saturday, 11 January 2020 17:30 (1 hour)

Primary author: NIGMATKULOV, Grigory (National Research Nuclear University MEPhI)

Presenter: NIGMATKULOV, Grigory (National Research Nuclear University MEPhI)

Contribution ID: 58 Type: not specified

### Review of recent top physics results from the LHC

Saturday, 4 January 2020 18:30 (30 minutes)

**Primary author:** Prof. LIPNIACKA, Anna (University of Bergen (NO))

Presenter: Prof. LIPNIACKA, Anna (University of Bergen (NO))

Contribution ID: 59 Type: not specified

### Flow in small systems at LHC

Sunday, 5 January 2020 10:00 (45 minutes)

**Primary author:** ZHOU, You (Niels Bohr Institute (DK))

Presenter: ZHOU, You (Niels Bohr Institute (DK))

Contribution ID: **60** Type: **not specified** 

# Conference Talk: From Little Bang to Mini Bang: studying the primordial fluid at the LHC

Sunday, 5 January 2020 18:00 (20 minutes)

Primary author: ZHOU, You (Niels Bohr Institute (DK))

**Presenter:** ZHOU, You (Niels Bohr Institute (DK))

Contribution ID: 61 Type: not specified

### Anisotropic Flow in small systems

pp collisions at 13 TeV show the properties similar to relativistic heavy ion collisions like radial and anisotropic flow and ridge. It became the main discovery at CERN LHC.

Primary author: ZHOU, You (Niels Bohr Institute (DK))

Presenter: ZHOU, You (Niels Bohr Institute (DK))

Contribution ID: 62 Type: not specified

## Conference Talk: Strangeness production in small systems - from revolution to resolution

Sunday, 5 January 2020 17:40 (20 minutes)

Primary author: CHRISTIANSEN, Peter (Lund University (SE))

**Presenter:** CHRISTIANSEN, Peter (Lund University (SE))

Contribution ID: 63 Type: not specified

#### Masterclass

Saturday, 11 January 2020 10:30 (2h 30m)

**Presenter:** ARSENE, Ionut Cristian (University of Oslo (NO))

Contribution ID: 64 Type: not specified

#### Masterclass

Friday, 10 January 2020 09:30 (3 hours)

**Presenter:** ARSENE, Ionut Cristian (University of Oslo (NO))