

PROGRAM of the 26th International workshop “What comes beyond the standard models” [Real and Virtual Workshop]

Monday, 10th of July 2023

Arrival day

Afternoon session:

Chair person: Elia Dmitrieff

Bled/Ljubljana 16:00 Moscow/Tel Aviv 17:00 New Delhi 19:30 Beijing/Irkutsk 22:00 Tokyo 23:00 New York 10:00 San Francisco 7:00

15:30 – 16:00: N.S. Mankoč Borštnik: Opening the 26th International workshop “What comes beyond the standard models” [Real and Virtual Workshop]

16.00 – 17:30: N.S. Mankoč Borštnik: How far can we understand nature with the spin-charge-family theory, describing the internal spaces of fermions and bosons with the Clifford algebra I.a.

17.30 – 19:00: U. Jentschura: Ultra-relativistic tachyonic and tardyonic wavepackets on cosmic scales, I.a.

20:00 Dinner at Labod

21:30 Discussion section on questions of the day
Preparing program for the next day

PROGRAM of the 26th International workshop “What comes beyond the standard models” [Real and Virtual Workshop]

Tuesday, 11th of July 2023

7:00 – 8:30 Morning private discussion section

8:30 – 9:30 Breakfast

Morning session:

Chair person: U. Jentschura

Bled/Ljubljana 09:00 Moscow/Tel Aviv 10:00 New Delhi 12:30 Beijing/Irkutsk 15:00 Tokyo 16:00 New York 03:00 San Francisco 00:00

09:30 – 11:00: Andrea Addazi: Quantum gravity in lab, I.a.

11:00 – 12:00: E. Miztani: A transformation groupoid and its representation -- A theory of dimensionality, I.a.

12:00 – 13:30: H.B. Nielsen: A point of view of gravity as needed spontaneous breaking of local general linear group, I.a.

13:30 Fast lunch

Afternoon session:

Chair person: H. B. Nielsen

Bled/Ljubljana 16:00 Moscow/Tel Aviv 17:00 New Delhi 19:30 Beijing/Irkutsk 22:00 Tokyo 23:00 New York 10:00 San Francisco 7:00

16:00 – 17:30: A. Hernandez-Galeana: Fermion masses and mixing within a gauged SU(3) family symmetry model I.a.

17.30 – 19:00: Elia Dmitrieff: Some informational aspects of fundamental particle modeling

19:00 Dinner at Labod

22:00 Discussion section on questions of the day
Preparing program for the next day

PROGRAM of the 26th International workshop “What comes beyond the standard models” [Real and Virtual Workshop]

Wednesday, 12th of July 2023

7:00 – 8:30 Morning private discussion section

8:30 – 9:30 Breakfast

Morning session:

Chair person: M. Khlopov

Bled/Ljubljana 09:00 Moscow/Tel Aviv 10:00 New Delhi 12:30 Beijing/Irkutsk 15:00 Tokyo 16:00 New York 03:00 San Francisco 00:00

09:30 – 11: 00 N.S. Mankoč Boršnik: How far can we understand nature with the spin-charge-family theory, describing the internal spaces of fermions and bosons with the Clifford algebra I.b.

11:00 – 12:30: Shu-Yuan Guo: Footprints of axion-like particle in pulsar timing array data and JWST observations, I.a.

12.30 – 13.00 : Discussions

13:00 Fast lunch

Afternoon session:

Chair person: E. Miztani

Bled/Ljubljana 16:00 Moscow/Tel Aviv 17:00 New Delhi 19:30 Beijing/Irkutsk 22:00 Tokyo 23:00 New York 10:00 San Francisco 7:00

16:00 – 17:30: K.V. Stepaniantz: The gauge coupling unification in Grand Unified Theories based on the group E_8 , I.a.

17.30 – 19:00: H.B. Nielsen: A point of view of gravity as needed spontaneous breaking of local general linear group, I.b.

19:00 Dinner at Labod

22:00 Discussion section on questions of the day
Preparing program for the next day

PROGRAM of the 26th International workshop “What comes beyond the standard models” [Real and Virtual Workshop]

Thursday, 13th of July 2023

7:00 – 8:30 Morning private discussion section

8:30 – 9:30 Breakfast

Morning session:

Chairperson: M.Y. Khlopov

Bled/Ljubljana 09:00 Moscow/Tel Aviv 10:00 New Delhi 12:30 Beijing/Irkutsk 15:00 Tokyo 16:00 New York 03:00 San Francisco 00:00

09:00 – 10:30: R. Bernabei: I. Recent efforts in the DAMA project; II. Ssummary: The features and the results of DAMA/LIBRA{phase2 experiment at Gran Sasso

10:30 – 12: 00: K. Zioutas: Clean energy from the dark Universe?, I.a.

12.00 – 13.30 Discussion (Andrea)

13:30 Fast lunch

Afternoon session:

Chair person: E. Dmitrieff

Bled/Ljubljana 16:00 Moscow/Tel Aviv 17:00 New Delhi 19:30 Beijing/Irkutsk 22:00 Tokyo 23:00 New York 10:00 San Francisco 7:00

.16:00 – 17:30: N.S. Mankoč Borštnik: How Clifford algebra helps understand second quantized quarks, leptons and corresponding vector and scalar boson fields, opening a new step beyond the standard model, II.a.

17.30 – 19:00: A. Hernandez-Galeana: Fermion masses and mixing within a gauged SU(3) family symmetry model I.b.

19:00 Dinner at Labod

21:30 Discussion section on questions of the day

Preparing program for the next day

PROGRAM of the 26th International workshop "What comes beyond the standard models" [Real and Virtual Workshop]

Friday, 14th of July 2023

7:00 – 8:30 Morning private discussion section

8:30 – 9:30 Breakfast

Morning session:

Chairperson: N.S. Mankoč Borštnik

Bled/Ljubljana 09:00 Moscow/Tel Aviv 10:00 New Delhi 12:30 Beijing/Irkutsk 15:00 Tokyo 16:00 New York 03:00 San Francisco 00:00

09:30 – 11: 00: I. Antoniadis: Swampland program, extra dimensions and supersymmetry breaking

11:00 – 12: 30: H.B. Nielsen: Dark matter with macroscopic particles developed, II.a.

12.30 – 13:30 O.M. Lecian: Properties of fractons, I.a.

13:30 Fast lunch

Afternoon session:

Chairperson: A. Hernandez-Galeana

Bled/Ljubljana 16:00 Moscow/Tel Aviv 17:00 New Delhi 19:30 Beijing/Irkutsk 22:00 Tokyo 23:00 New York 10:00 San Francisco 7:00

16: 00 – 17:30: U. Jentschura: Quantum electrodynamics: A few additions to a Jewel of theoretical physics group, II.a.

17:30 – 19:00: E. Dmitrieff: Some informational aspects of fundamental particle modelling, **Ib.**

19:30 Dinner at Labod

22:00 Preparing program for the next day

PROGRAM of the 26th International workshop "What comes beyond the standard models" [Real and Virtual Workshop]

Saturday, 15th of July 2023

7:00 – 8:30 Morning private discussion section

8:30 – 9:30 Breakfast

Morning session:

Chairperson: A. Kleppe

Bled/Ljubljana 09:00 Moscow/Tel Aviv 10:00 New Delhi 12:30 Beijing/Irkutsk 15:00 Tokyo 16:00 New York 03:00 San Francisco 00:00

09:30 – 11:00: H.B. Nielsen: Dark matter with macroscopic particles developed, IIb.

11:00 – 12:30: M.Yu. Khlopov: Recent advances of Beyond the Standard model cosmology, I.a.

12:30 – 13:30: E. Miztani: A Transformation groupoid and its representation -- A theory of dimensionality, I.b.

13:00: Fast lunch

Afternoon session:

16:00 – 19:00: **Chair person:** H.B. Nielsen

Bled/Ljubljana 16:00 Moscow/Tel Aviv 17:00 New Delhi 19:30 Beijing/Irkutsk 22:00 Tokyo 23:00 New York 10:00 San Francisco 7:00

16:00 – 17:30: N.S. Mankoc Borstnik: Clifford odd and even objects in even and odd dimensional spaces describing internal, III.a.

17.30 – 18:30: K. Zioutas: Clean energy from the dark Universe?

19:00 Dinner

22:00 Preparing program for Virtual sessions

PROGRAM of the 26th International workshop "What comes beyond the standard models" [Virtual Workshop]

Sunday, 16th of July 2023

7:00 – 8:30 Morning private discussion section

8:30 – 9:30 Breakfast

Morning session:

Chair person: H.B. Nielsen

09:30 – 11:00: M.Yu. Khlopov: Recent advances of Beyond the Standard model cosmology, I.b.

11:00 – 12:00 : M. Krasnov: Multidimensional $f(R)$ -gravity as the source of primordial black holes.

12:00 – 13:00: P. Natwariya: In search of global 21-cm signal using artificial neural network in light of EDGES and ARCADE 2 11:00 – 12:00 K.

13:00 – 14: 00: S. Roy: The stochastic gravitational wave background.

13.00 – 14.00: K. Zioutas: Clean energy from the dark Universe? I.b.

14.00 – 15.00 D. Sopin; Balancing baryon and dark matter excess

14:30 Fast lunch

Afternoon session:

Chair person: N.S. Mankoč Borštnik

Bled/Ljubljana 16:00 Moscow/Tel Aviv 17:00 New Delhi 19:30 Beijing/Irkutsk 22:00 Tokyo 23:00 New York 10:00 San Francisco 7:00

16:00 – 17:30: A. Chaudhuri: Dark matter production from two evaporating PBH distributions.

17.30 – 19:00:

PROGRAM of the 26th International workshop “What comes beyond the standard models” [Virtual Workshop]

Monday, 17th of July 2023

7:00 – 8:30 Morning private discussion section

8:30 – 9:30 Breakfast

Morning session:

Chair person: A.Chaudhuri

09:30 – 11:00 N.M. Mankoc Borstnik: Can the Clifford even algebra, used to describe internal spaces of boson fields, which are the gauge fields of fermion fields described by the Clifford odd algebra, bring a new understanding into second quantization of (gravity) fields? And H.B. Nielsen, IV.a

11:00 – 12:30: H.B. Nielsen

12:30 – 14:00: A. Ghosal: Sky meets Laboratory via RGE: Axions, Peccei-Quinn phase transitions and gravitational waves

14:00 Fast lunch

Afternoon session

16:00 – 18:30: **Chair person:** N.S.Mankoc Borstnik

Bled/Ljubljana 16:00 Moscow/Tel Aviv 17:00 New Delhi 19:30 Beijing/Irkutsk 22:00 Tokyo 23:00 New York 10:00 San Francisco 7:00

16:00 – 17:30:

17.30 – 18:30: N.S. Mankoč Borštnik: **Closing the Real Part of the Workshop**

PROGRAM of the 26th International workshop “What comes beyond the standard models” [Virtual Workshop]

Tuesday, 18th of July 2023

Morning session:

Chair person: M.Yu. Khlopov

Bled/Ljubljana 09:00 Moscow/Tel Aviv 10:00 New Delhi 12:30 Beijing/Irkutsk 15:00 Tokyo 16:00 New York 03:00 San Francisco 00:00

09:30 – 11:00: Andrea Addazi: Quantum gravity in lab, I.b.

11:00 – 12:00: V. Vakulenko: Possibility of formation of antimeteorites in a globular cluster of antistars

12:00 – 13:30: H.B. Nielsen: A point of view of gravity as needed spontaneous breaking of local general linear group,

13:30 M.Khlopov. **Closing the ZOOM Part of the Workshop**