PGU-3 PROGRAM

Wednesday, 26 Nov.

08:30 – 09:10: **Registration, coffee/tea**

Plenary session 1

- 09:10 – 09:30: **Opening remarks**
- 09:30 – 10:20: **Plenary talk:**

Dao Tien Khoa: *Quantum mechanics of stars.*

- 10:20 - 10:50: **Break.**

Parallel sessions 1:

Section 1 (S1): *Quantum physics at small scales.*	**Section 2 (S2):** *Physics at large scales and quantum phenomena*

- 10:50 – 11:40: **Invited talks**

S1-I1: **Le Anh Thu:** *Atoms and molecules in ultrafast intense laser pulses and attosecond physics: semiclassical and quantum perspectives.*	S2-I1: **Takada Masahiro**: *Large scale structure.*

- 11:40 – 12:30: **Invited talks**

S1-I2: **Boninsegni Massimo** *Superfluid and supersolid phases: physical insight from computer simulations.*	S2-I2: **Kurihara Yoshimasa:** *Quantum GraviElectroDynamics*

12:30 – 14:00: **LUNCH BREAK**

Parallel sessions 2:

Section 1 (S1): *Quantum physics at small scales.*	**Section 2 (S2):** *Physics at large scales and quantum phenomena*

- 14:00 – 14:50: **Invited talks**

S1-I3: **Nguyen Hai Chau:** *Measurements in quantum mechanics: from decoherence to ultradecoherence.*	S2-I3: **Park Seong Chan:** *Dark matter: if not WIMP, then what?*

- 14:50 – 15:20: **Contributed talks** (*15 min per talk)*

S1-C1: **Tran Minh Hieu**: *Type-1 two Higgs doublet model: data fitting and detection ability.*	S2-C1: **Do Quoc Tuan**: *Anisotropic inflation in light of the ACT DR6 data.*
S1-C2: **Vo Van Thuan**: *Objective reality in quantum physics.*	S2-C2: **Kieu Thi Ny**: *From cosmic rays to lightning flashes: high-energy phenomena observed by the telescope array.*

- 15:20 – 15:50: **Break**
- **15:50 - 17:30: HEPS meeting.**
  - Scientific session (*invited talks*):
    1. **Le Duc Ninh** (Phenikaa univ. Hanoi):
       Precision calculations and searching for new physics beyond the Standard Model.
    2. **Tran Minh Hieu** (HUST, Hanoi):
       Theoretical high energy physics in Vietnam - An overview.
    3. **Cao Van Son** (ICISE, Quy Nhon):
       Recent developments in Neutrino physics.
    4. **Dong Van Thanh** (HUST, Hanoi):
       Belle II experiments and Vietnam group activities.
  - Organizational session (*in Vietnamese*)

● 18:00 - 21:00: **BANQUET**

Thursday, 27 Nov.

09:00 – 09:30: **coffee/tea**

Plenary session 2

● 9:30– 10:20: **Plenary talk**

Darriulat Pierre: *The discoveries of W, Z and Higgs bosons.*

● 10:20 - 10:50: Break/Posters.

Parallel sessions 3:

Section 1 (S1): *Quantum physics at small scales.*	**Section 2 (S2):** *Physics at large scales and quantum phenomena*

● 10:50 – 11:40: **Invited talks**

S1-I4: **Kim Doris:** *Recent highlights from Belle and Belle II.*	S2-I4: **Nguyen Quynh Lan:** *Searches for dark matter using gravitational-wave detectors ((of LIGO-Vigo-KAGRA)).*

● 11:40 - 12:30: **Invited talks**

S1-I5: **Koshio Yusuke:** *Physics in Super-Kamiokande and Hyper-Kamiokande.*	S2-I5: **Kanno Sugummi:** *Gravitational quantum effects.*

12:30 – 14:00: **LUNCH BREAK**

Parallel sessions 4:

Section 1 (S1): *Quantum physics at small scales.*	**Section 2 (S2):** *Physics at large scales and quantum phenomena*

- 14:00 – 14:50: **Invited talks**

S1-I6: **Oyama Yuichi** *What we have learned from our experience with Kamioka-related neutrino experiments.*	S2-I6: **Yu Haibo:** *The small-scale Universe and the nature of dark matter.*

- 14:50 – 15:35: **Contributed talks** (*15 min per talk)*

S1-C3: **Prasad Vindhyavasini**: *New physics searches at BESIII* S1-C4: **Nguyen Thi Dung**: *The commissioning and physics prospects of time of flight detector in the T2K ND280 upgrade.* S1-C5:.**Chen Chao**: *(Semi-)leptonic D decays at BESIII*	S2-C3: **Pang Peter**: *Revealing tensions in neutron star observations with pressure anisotropy.* S2-C4: **Natthason Autthisin**: *Gravitational wave echoes from three-form black hole.* S2-C5: **Matthew Paul:** *Sustaining traversable wormholes in braneworld cosmology*

- 15:35 - 16:00: **Break/Posters.**

Poster sessions:

- 16:00 – 16:45:

Machine gun talks (max: 1min x45 or 1.5min x30)

- 16:45 - 18:00: **Poster session** (see the list of posters attached below).

Friday, 28 Nov.

09:00 – 09:30: **coffee/tea**

Plenary session 3

- 09:30 – 10:20: **Plenary talk**

Kusenko Alex: *Black holes and dark matter*

- 10:20 - 10:50: Break/Posters.

Parallel sessions 5:

Section 1 (S1): *Quantum physics at small scales.*	**Section 2 (S2):** *Physics at large scales and quantum phenomena*

- 10:50 – 11:40: **Invited talks**

S1-I7: **Nguyen Xuan Dung:** *Gravitons in fractional quantum Hall: From theory to experiment.*	S2-I7: **Mukohyama Shinji:** *Gravity and cosmology beyond general relativity.*

- 11:40– 12:30: **Invited talks**

S1-I8: **Nguyen Quoc Hung:** *Quantum computation as a tool to study physics.*	S2-I8: **Pi Shi:** *Gravitational wave cosmology.*

12:30 – 14:00: **LUNCH BREAK**

Parallel sessions 6:

Section 1 (S1): *Quantum physics at small scales.*	**Section 2 (S2):** *Physics at large scales and quantum phenomena*

- 14:00 – 14:50: **Invited talks**

S1-I9: Nguyen The Toan: *Critical properties of conformal field theory at the boundary of the AdS/CFT correspondence and its relations in condensed matter physics.*	S2-I9: **Lee Bum-Hoon:** *The cosmology with the Gauss-Bonnet curvature and WIMP constraints.*

- 14:50 – 15:40: Invited talk

S2-I10: **Nguyen Nhat Minh:** *What millions of galaxies have to say.*

- 14:50 – 15:35: **Contributed talks** (*15 min per talk)*)

S1-C6: **Nguyen Minh Truong**: *The status of the COMET experiment at J-PRAC.* S1-C7: **Xei Kaiji** (IHEP, Beijing, China): *Search for CP violation with spin entangled hyperon-antihyperon pairs at BESIII.* S1-C8: **Ta Duy Hoang**: *A hierarchy of efficient bounds on quantum capacities.*	Invited talk (by Nguyen Nhat Minh, see above)

- 15:35 – 16:05: **Break/posters**

- 16:05 – 17:20: **Contributed talks** (*15 min per talk)*)

S1-C9: **Dao Xuan Viet**: *Monte Carlo studies of the two-dimensional XY model with four-fold anisotropy.* S1-C10: **Nguyen Hai Phong**: *Magnetic and magneto-caloric investigation of amorphous systems in the description of disordered Ising model.*	S2-C6: **Rakesh K Jha,** *Four fold path to Thermality: Inequivalent purifications of Rindler wedge* S2-C7: **Kavya N.S.**: *Can f(Q) gravity alleviate tension?* S2-C8: **Sai Swagat Mishra**: *Padé cosmography and its insight into teleparallel gravity.*

S1-C11: **Nguyen Duy Huy:** : *Unlocking carbon cluster diversity: A swarm intelligence and machine-learning toolkit.* S1-C12: **Nguyen Thi Hai Yen**: *Resistivity characteristics near the metal–insulator transition in the half-filled Anderson–Hubbard model.* S1-C13: **Nguyen Hoang Vu**: *Color superconductivity in general dimension via holography.*	S2-C9: **Neeraj Kumar**: *Renyi constraints on black hole merger.* S2-C10: **Khalid Sàiullah:** *Charged black holes in Lovelock gravity.*

- 17:20 – 17:30: **Concluding remarks.**
- 17:30: **Closing session.**

LIST OF POSTERS

1. **Das Kaustav** (IACS, Kolkata, India):
   Quantum entanglement and Hawking radiation.
2. **Hoang Van Quyet** (HNUE, Hanoi, Vietnam):
   Quantum-corrected gravitational collapse and multi-messenger signatures: Beyond spherical symmetry in loop quantum gravity.
3. **Le Cam Vi** (ICISE, Quy Nhon, Viet Nam)**:**
   Fourier transformation for non-parametric analysis of neutrino oscillation
4. **Mai Hong Hanh & Cao Dinh Son (**University of Engineering and Technology, VNU, hanoi**):**
   Optical properties of au-ion-implanted ZnO nanorods: A comparative study with Au nanoparticle deposition.
5. **Nguyen Hoang Anh** (Phenikaa univ., Hanoi, Viet Nam):
   Quantum neural networks force fields.
6. **Nguyen Tuan Duy (**IOP, Hanoi, Viet Nam):
   A flavor-dependent U(1) extension for flavor puzzle,neutrino mass, and dark matter.

7. **Nguyen Van Duy** (Phenikaa univ., Hanoi, Viet Nam):
   Quantum simulations of neutrino oscillations.

8. **Nguyen Vo Nguyen Huy** (HUST, Hanoi, Viet Nam):
   Phase transition of 2D Ising model with J_x -J_y-J_a -J_b interaction.

9. **Nurpeisoov Aiken** (Kazakh Nat. Univ., Kazakhstan, Viet Nam):
   Experimental study of the $^{11}B(^{10}B, ^{9}Be)^{12}C$ reaction at 41.3 MeV.

10. **Pham Dinh Duy** (HUST, Hanoi, Viet Nam):
    Shaped control pulses for high-fidelity single-qubit gates.

11. **Pham Phuong Anh** (HUST, Hanoi, Viet Nam):
    Hamiltonian-based precise and efficient neutrino oscillation probability computations for neutrino experiments.

12. **Pham Van Ky** (IOP, Hanoi, Viet Nam):
    The perturbative f (R) theory: non-static charged black hole and embedding in the background of the FLRW cosmology, uniqueness of solutions, TOV equation.

13. **Praveen Kumar Dhankar (**Symbiosis Inst. of Tech., Nagpur, India**)**
    Statistical constraints on anisotropic Bianchi-III cosmology in f(R, T)-gravity using MCMC methods

14. **Quách Khánh Đức** (HUST, Hanoi, Viet Nam)
    Testing the maximum violation of the Leggett-Garg inequality with neutrino oscillation measurement.

15. **Tran Phan Thuy Linh** (HNUE, Hanoi, Viet Nam):
    First-principles analysis of structural and electronic characteristics of Si-, Ge-, and Sn-based Xene surfaces under CO or NO_2 adsorption.

16. **Tran Thi Thanh Huyen** (Phenikaa univ., Hanoi, Viet Nam):
    Input – Output theory for a superconducting qubit array coupled to a transmission line.

17. **Tran Viet Hung** (Phenikaa univ., Hanoi, Viet Nam):
    Machine learning force field.

18. **Trương Minh Anh** (HUST, Hanoi, Viet Nam):
    Unparticle effects on the scatterings of axion-like particles.

19. **Truong Thanh Sang** (ICISE, Quy Nhon, Viet Nam):
    Development of SiPM electronics for radiation detection and tomographic reconstruction.

20. **Vu Van Huong** (Phenikaa univ., Hanoi, Viet Nam): Quantum: *Simulation of collective neutrino oscillations.*