PGU-3 SCIENTIFIC PROGRAM

PLENARY SECTION

1. **Dao Tien Khoa** (INST, Hanoi, Viet Nam): *Quantum mechanics of stars*.
2. **Darriulat Pierre** (VNSC, VAST, Hanoi Viet Nam): *The discoveries of W, Z and Higgs bosons.*
3. **Kusenko Alex** (UCLA, Los Angeles, USA): *Primordial black holes.*

PARALLEL SECTIONS

SECTION 1
"*Quantum physics at small scales*"

INVITED TALKS

1. **Boninsegni Massimo** (Alberta Univ., Alberta, Canada):
   Superfluid and supersolid phases: physical insight from computer simulations.
2. **Kim Doris** (SoongSil Univ., Seoul, Korea):
   Recent highlights from Belle and Belle II
3. **Koshio Yusuke** (Okayama Univ., Okayama, Japan):
   Physics in Super-Kamiokande and Hyper-Kamiokande.
4. **Oyama Yuichi** (KEK, Tsukuba, Japan):
   What we have learned from our experience with Kamioka-related neutrino experiments.
5. **Le Anh Thu** (Univ. of Connecticut, Mansfield, USA):
   Atoms and molecules in ultrafast intense laser pulses and altosecond physics: semiclassical and quantum perspectives.
6. **Nguyen Hai Chau** (Univ of Siegen, Siegen, Germany):
   Measurements in quantum mechanics: from decoherence to ultradecoherence.
7. **Nguyen Quoc Hung** (IQI, VNU, Hanoi, Viet Nam):
   Quantum computation as a tool to study physics
8. **Nguyen The Toan** (HUS, Hanoi, Viet Nam):
   Crutical properties of conformal field theory at the boundary of the AdS/CFT correspondence and its relations in condensed matter physics.
9. **Nguyen Xuan Dung** (ICISE, Quy Nhon, Viet Nam):
   Gravitons in fractional quantum Hall: From theory to experiment.

SECTION 2
"*Physics at large scales and quantum phenomena*"

INVITED TALKS

1. **Kanno Sugumi** (Kyushu Univ., Fukuoka, Japan):
   Gravitational quantum effects
2. **Kurihara Yoshimasa** (KEK, Tsukuba, Japan):
   Quantum GraviElectroDynamics.
3. **Lee Bum-Hoon** (Sogang Univ, Seoul, Korea):
   The Cosmology with the Gauss-Bonnet curvature and WIMP constraints.
4. **Mukohyama Shinji** (YITP & RESCEU, Japan):
   Gravity and cosmology beyond general relativity.
5. **Nguyen Quynh Lan** (Phenikaa Univ., Hanoi,VietNam):
   Searches for dark matter using gravitational-wave detectors ((of LIGO-Vigo-KAGRA)).
6. **Nguyen Nhat Minh** (IMPU, Tokyo, Japan):
   Cosmological tests of gravity, from DESI to PFS: What millions of galaxies have to say.
7. **Park Seong Chan** (Yonsei Univ.,Seoul, Korea):
   Dark matter: if not WIMP, then what?
8. **Pi Shi** (ITP-CAS, Beijing, China):
   Gravitational wave cosmology
9. **Takada Masahiro** (IPMU, Tokyo, Japan):
   Large scale structure.
10. **Yu Haibo** (Univ. of California, Riverside, USA):
    The small-scale Universe and the nature of dark matter.

CONTRIBUTED TALKS

1. **Chen Chao** (IHEP, Beijing, China):
   (Semi-)leptonic D decays at BESIII
2. **Dao Xuan Viet** (HUST, Hanoi, Viet Nam):
   Monte Carlo studies of the two-dimensional XY model with four-fold anisotropy.
3. **Nguyen Duy Huy** (HUS, Hanoi, Viet Nam):
   Unlocking carbon cluster diversity: A swarm intelligence and machine-learning toolkit.
4. **Nguyen Hai Phong** (HUS, Hanoi, Viet Nam):
   Magnetic and magneto-caloric investigation of amorphous systems in the description of disordered Ising model.
5. **Nguyen Hoang Vu** (JINR, Dubna, Russia):
   Color superconductivity in general dimension via holography.
6. **Nguyen Thi Dung** (HUS, Hanoi, Viet Nam):
   The commissioning and physics prospects of time of flight detector in the T2K ND280 upgrade.
7. **Nguyen Thi Hai Yen** (IOP, Hanoi, Viet Nam):
   Resistivity characteristics near the metal–insulator transition in the half-filled Anderson–Hubbard model.
8. **Prasad Vindhyavasini** (Jilin Univ., Changchun, China):
   New physics searches at BESIII.
9. **Ta Duy Hoang** (NUS, Singapore):
   A hierarchy of efficient bounds on quantum capacities.
10. **Tran Minh Hieu** (HUST, Hanoi, Viet Nam):
    Type-1 two Higgs doublet model: data fitting and detection ability.
11. **Vo Van Thuan** (ITAR, Duy Tan Univ., Hanoi, Viet Nam):
    Objective reality in Quantum physics.
12. **Xei Kaiji** (IHEP, Beijing, China):
    Search for CP violation with spin entangled hyperon-sntihyperon pairs at BESIII.

CONTRIBUTED TALKS

1. **Do Quoc Tuan** (Phenikaa Univ., Hanoi, Viet Nam):
   Anisotropic inflation in light of the ACT DR6 data.
2. **Kieu Thi Ny** (Van Lang Univ., HCM city, Viet Nam):
   From cosmic rays to lightning flashes: high-energy phenomena observed by the telescope array.
3. **Natthaason Autthisin** (Khon Kaen Univ., Thailand):
   Gravitational wave echoes from three-form black hole.
4. **Pang Peter** (NIKHEF, Amsterdam, Netherland):
   Revealing tensions in neutron star observations with pressure anisotropy.
5. **Sai Swagat Mishra** (BITS, Hyderabad, India):
   Padé cosmography and its insight into teleparallel gravity.
6. **Kavya N. S.** (CHRIST (Deemed to be University), India):
   Can f(Q) gravity alleviate tension?

POSTER SECTION

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. **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.
4. **Nguyen Hoang Anh** (Phenikaa univ., Hanoi, Viet Nam):
   Quantum neural networks force field.
5. **Nguyen Tuan Duy (**IOP, Hanoi, Viet Nam):
   A flavor-dependent U(1) extension for flavor puzzle, neutrino mass, and dark matter.
6. **Nguyen Van Duy** (Phenikaa univ., Hanoi, Viet Nam):
   Quantum simulations of neutrino oscillations.
7. **Nguyen Vo Nguyen Huy** (HUST, Hanoi, Viet Nam):
   Phase transition of 2D Ising model with J_x -J_y-J_a -J_b interaction.
8. **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.
9. **Pham Dinh Duy** (HUST, Hanoi, Viet Nam):
   Shaped control pulses for high-fidelity single-qubit gates.
10. **Pham Phuong Anh** (HUST, Hanoi, Viet Nam):
    Hamiltonian-based precise and efficient neutrino oscillation probability computations for neutrino experiments.
11. **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.
12. **Quách Khánh Đức** (HUST, Hanoi, Viet Nam)
    Testing the maximum violation of the Leggett-Garg inequality with neutrino oscillation measurement.
13. **Tran Thi Thanh Huyen** (Phenikaa univ., Hanoi, Viet Nam):
    Input – Output theory for a superconducting qubit array coupled to a transmission line.
14. **Tran Viet Hung** (Phenikaa university, Hanoi, Viet Nam):
    Machine learning force field.
15. **Trương Minh Anh** (HUST, Hanoi, Viet Nam):
    Unparticle effects on the scatterings of axion-like particles.
16. **Truong Thanh Sang** (ICISE, Quy Nhon, Viet Nam):
    Develop a table-top scintillator–SiPM Apparatus for examining the parity violation in cosmic muon decay.
17. **Truong Thanh Sang** (ICISE, Quy Nhon, Viet Nam):
    Development of SiPM electronics for radiation detection and

tomographic reconstruction.

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