



Introduction to Taiwan Nuclear Physics Community

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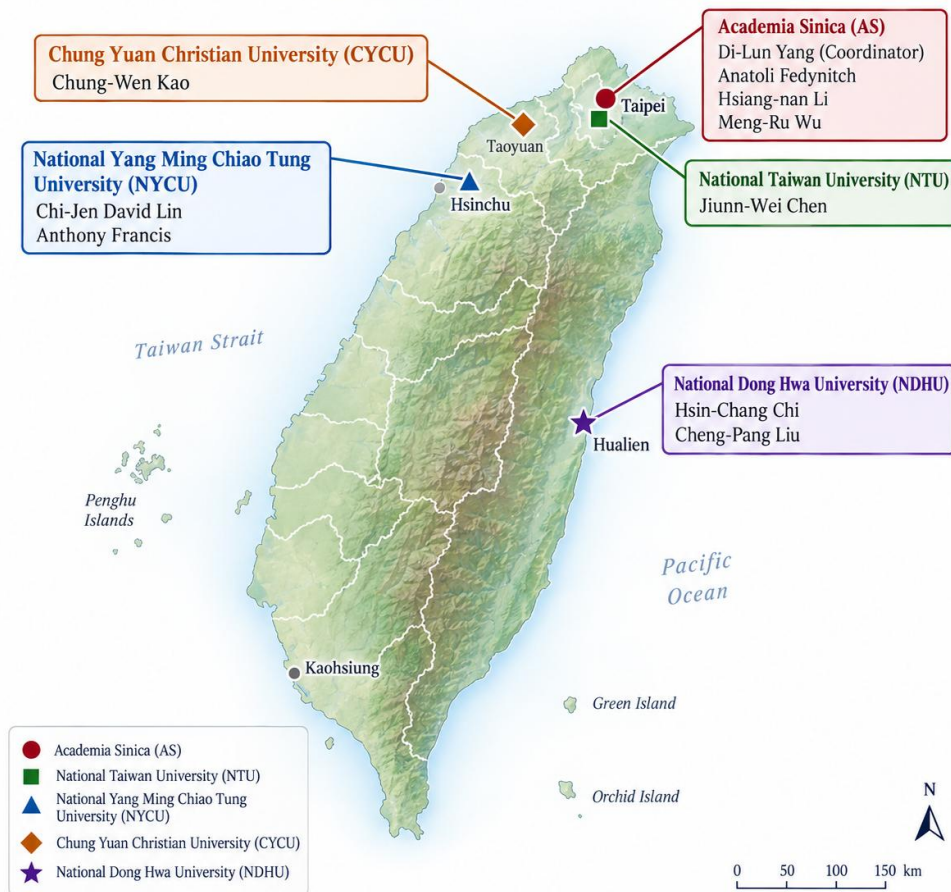
(T-K workshop on nuclear physics 2026, Sep 16-18)

<https://www.nstc.gov.tw/>

Nuclear Theory Community in Taiwan

NCTS Physics Division TG2.4 Nuclear Physics: Member Affiliations in Taiwan

10 faculty members



TG2.4: Nuclear Physics • NCTS Physics Division • 2026



Research Themes

- QCD related directions :

- **QCD and Hadron Physics:** Exploring the structure of nucleons, exotic hadrons, and the non-perturbative nature of the strong interaction.

Jiunn-Wei Chen (NTU), Anthony Francis (NYCU), Chung-Wen Kao (CYCU), Hsiang-nan Li (AS), David Lin (NYCU)

- **Lattice QCD:** Utilizing large-scale numerical simulations to calculate fundamental properties of quarks and gluons.

Anthony Francis (NYCU), David Lin (NYCU)

- **Quantum Computation:** Exploring how quantum computation might accelerate the calculations in quantum field theories and nuclear many-body problems.

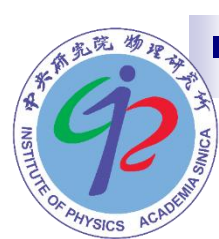
Jiunn-Wei Chen (NTU)

- **Relativistic Heavy-Ion Collisions:** Studying the Quark-Gluon Plasma, chiral effects, and transport phenomena in extreme conditions.

Anthony Francis (NYCU), Di-Lun Yang (AS)

- **Effective Field Theory:** Developing systematic frameworks for nuclear forces, electroweak processes, and perturbative QCD.

Jiunn-Wei Chen (NTU), Hsiang-nan Li (AS), Cheng-Pang Liu (NDHU), Chung-Wen Kao (CYCU)



Research Themes

■ Astrophysical & BSM perspectives :

- **Nuclear Astrophysics:** Investigating nucleosynthesis, neutrino-matter interactions, gravitational waves, and the physics of compact objects like neutron stars.

Meng-Ru Wu (AS), Di-Lun Yang (AS), Hao-Jui Kuan (UIUC->AS)

- **High-Energy Neutrinos and Cosmic Rays:** Modeling atmospheric and astrophysical particle fluxes and their interactions.

Anatoli Fedynitch (AS)

- **Nuclear and Atomic Theory for Fundamental Symmetries, Low-Energy Neutrinos, and Dark Matter Physics:** Applying nuclear and atomic many-body theories to searches of physics beyond the Standard Model, including precision tests in nuclear beta decay, atomic parity and time-reversal violations, direct detection of low energy neutrinos and dark matter candidates.

Jiunn-Wei Chen (NTU), Hsin-Chang Chi (NDHU), Cheng-Pang Liu (NDHU), Meng-Ru Wu (AS)

□ Experimental groups : HIC, J-PARC, EIC, etc.

Wen-Chen Chang (AS), Chia Ming Kuo (NCU), Yi Yang (AS)