Institute of Nuclear and Particle Physics (INPAC), Laboratory of the Underground Physics

Physics and Astronomy

• About the Lab •

The Institute of Nuclear and Particle Physics (INPAC) was established in Feb. 2009. It is an important milestone for SJTU to re-establish its strong research program in fundamental science. INPAC now has twenty faculty members working on diverse areas of fundamental research, including nuclear theory, particle theory, particle and nuclear experiment, astrophysics and cosmology. The Laboratory of the Underground Physics is working on number of underground experiments, mainly including PandaX experiment in in the China Jin-Ping Underground Laboratory in Sichuan, and JUNO at Jiangmen in Guangdong.

• About the Team •

Prof. Xiangdong JI

Research Areas: Dark Matter Detection, QCD, Hadron Physics, New Physics Beyond Standard Model

Professor Xiangdong Ji got a Ph. D. in physics from Drexel University, had post-doctoral positions at Caltech and MIT. Since 1996, he has been on the faculty at University of Maryland, College Park. He is a fellow of APS (since 2000). Professor Ji is currently the spokesperson and project leader for the PandaX dark matter search experiment in China's JinPing Deep-Underground Lab in Sichuan, China. PandaX experiment uses the liquid Xe as the detection medium for WIMPs (weekly interacting massive particles).

Prof. Jianglai LIU

Research Interest: Neutrino Experiment, Dark Matter Experiment

Professor Liu received Ph.D. degree in Physics in 2006 from the University of Maryland at College Park, USA. He held postdoctoral then senior postdoctoral scholar position at Caltech. Currently he is the PI of the neutrino physics group at the SJTU, involved in the Daya Bay and JUNO neutrino experiments. He is presently serving as the deputy spokesperson of the project. He was selected into the “1000 Young Talent Program” in China in 2011. He received the SJTU President Award in 2014 for his contribution in Daya Bay and PandaX experiments.

• Research Fields •

Dark Matter Detection

- The PandaX experiment is the “flagship” experiment led by INPAC faculties using xenon-based time projection chamber to detect dark matter and neutrino less double beta decay. The experiment is located in the China Jin-Ping Underground Laboratory in Sichuan, China.
- JUNO is another project we participated, using 20 kton of liquid scintillator detector at an underground facility at Jiangmen in Guangdong to determine the neutrino mass ordering through precision oscillation measurement of reactor neutrinos.

• Responsibility •

- Data analysis on the second phase of the PandaX dark matter experiment
- Detector development, prototyping, and data analysis for a high pressure xenon detector (PandaX-III)
- Developing the calibration system for the JUNO experiment

• Eligibility •

- Be in their second or third year of undergraduate study

- Hold at least a 2.5 GPA on a 4.0 scale
- Students of non-English speaking countries must provide English language proficiency certificate, IELTS no less than 6.0, and TOEFL no less than 90 points. If you are in the college for English teaching programs, please provide relevant certificates.
- Have at least one prior research experience

• Additional Financial Support •

Possible, but will be case by case according to the applicants.

• Contact •

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