

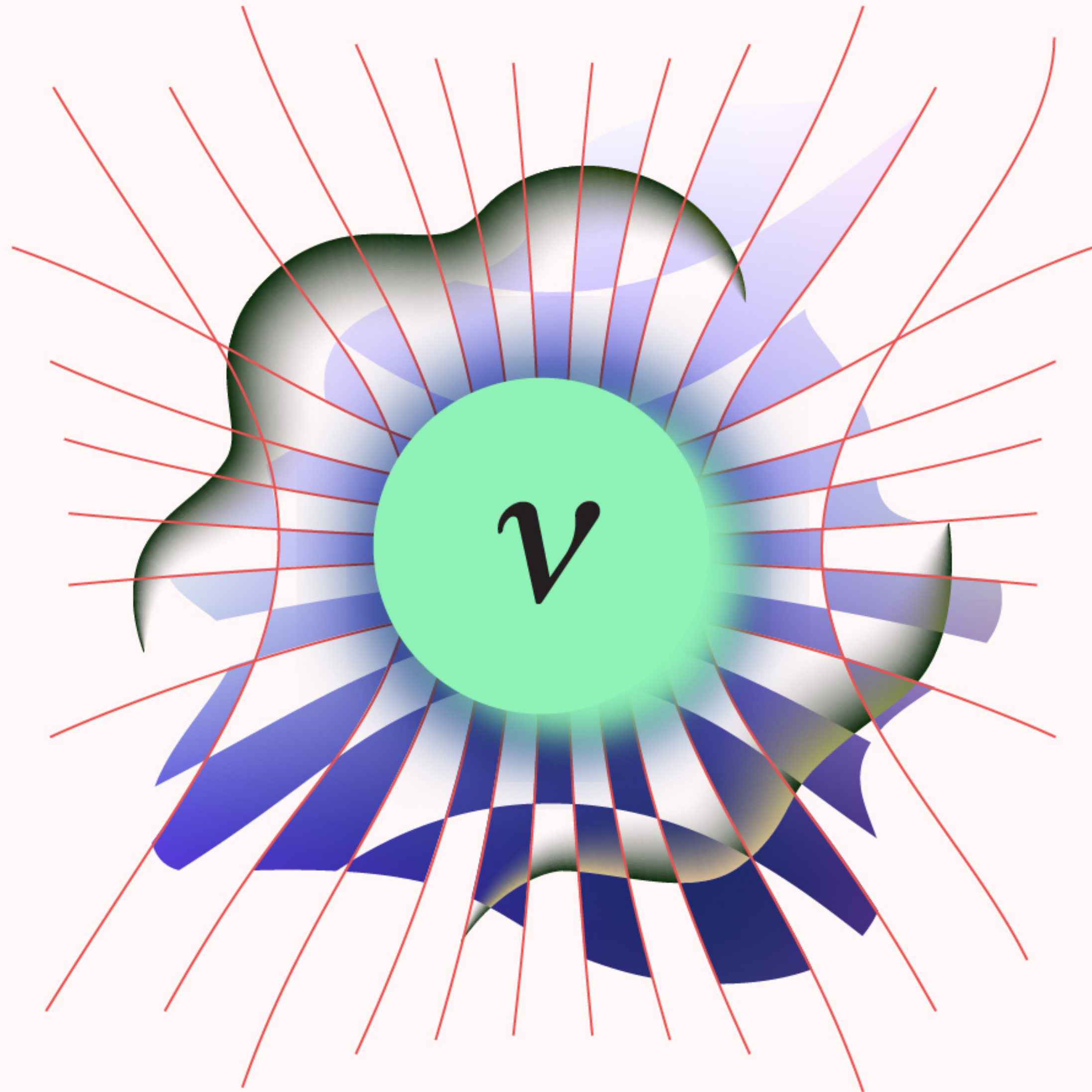
Neutrino Physics with JUNO

Narongkiat Rodphai
Institute of High Energy Physics, University of Chinese Academy of Sciences

การประชุมวิชาการนักเรียนไทยในจีน ครั้งที่ 1 — Way Forward 2023

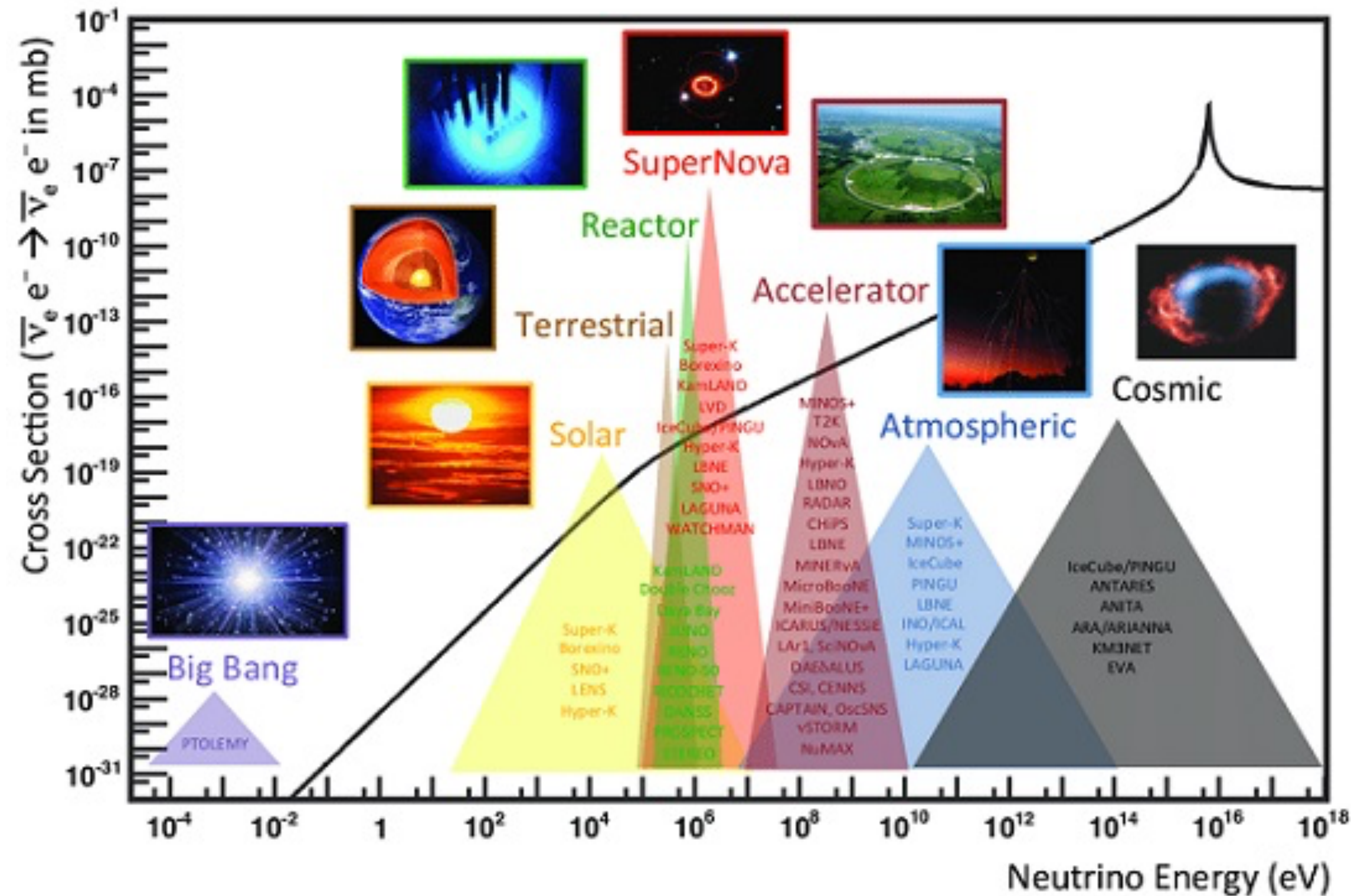
10 June 2023

“What” Are We Looking for?

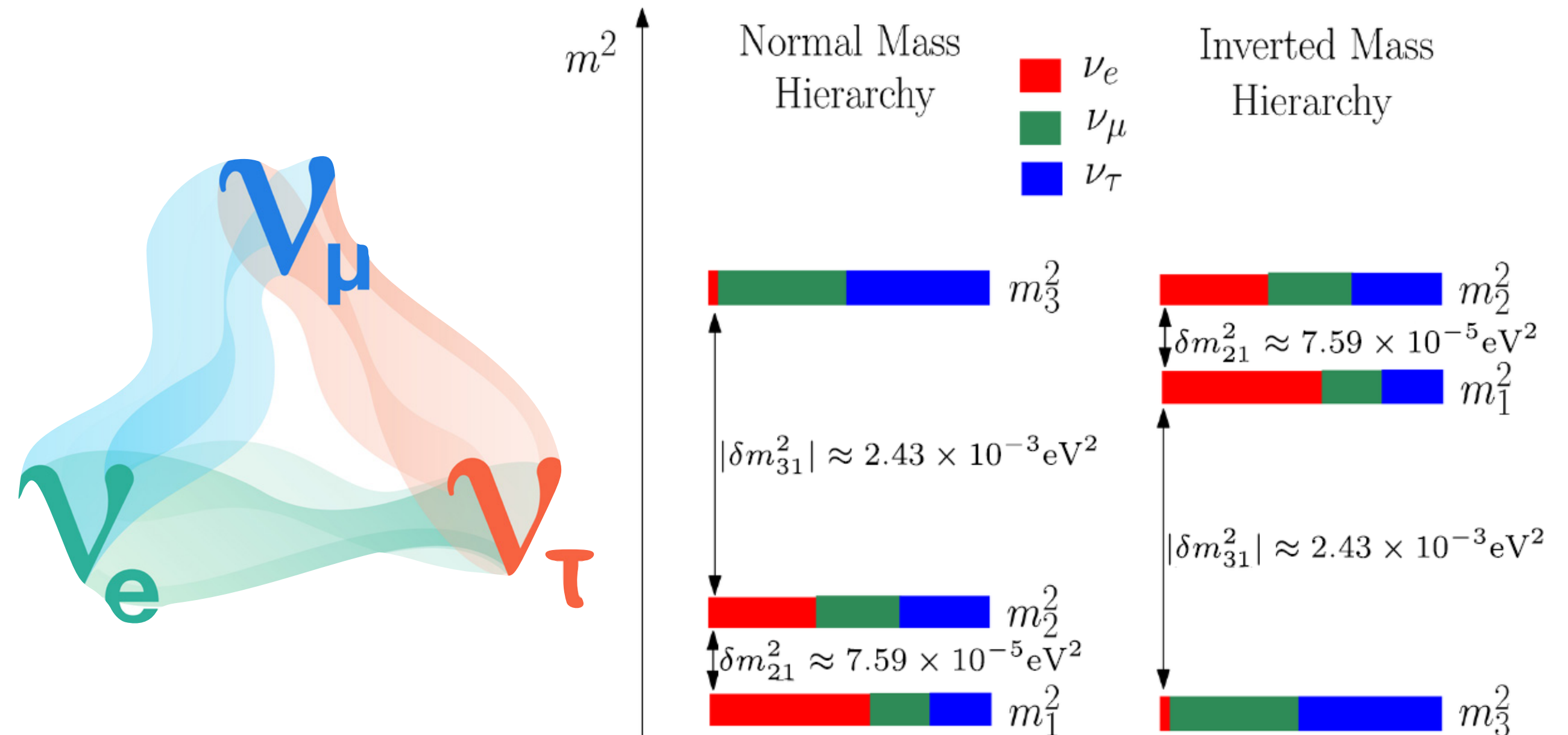


One of Smallest Particles
“Ghost” Particle
“Almost Massless”
“Unfriendly Runner”

“Where” and “Why” of Neutrino?



- Neutrinos from various sources of many galactic events

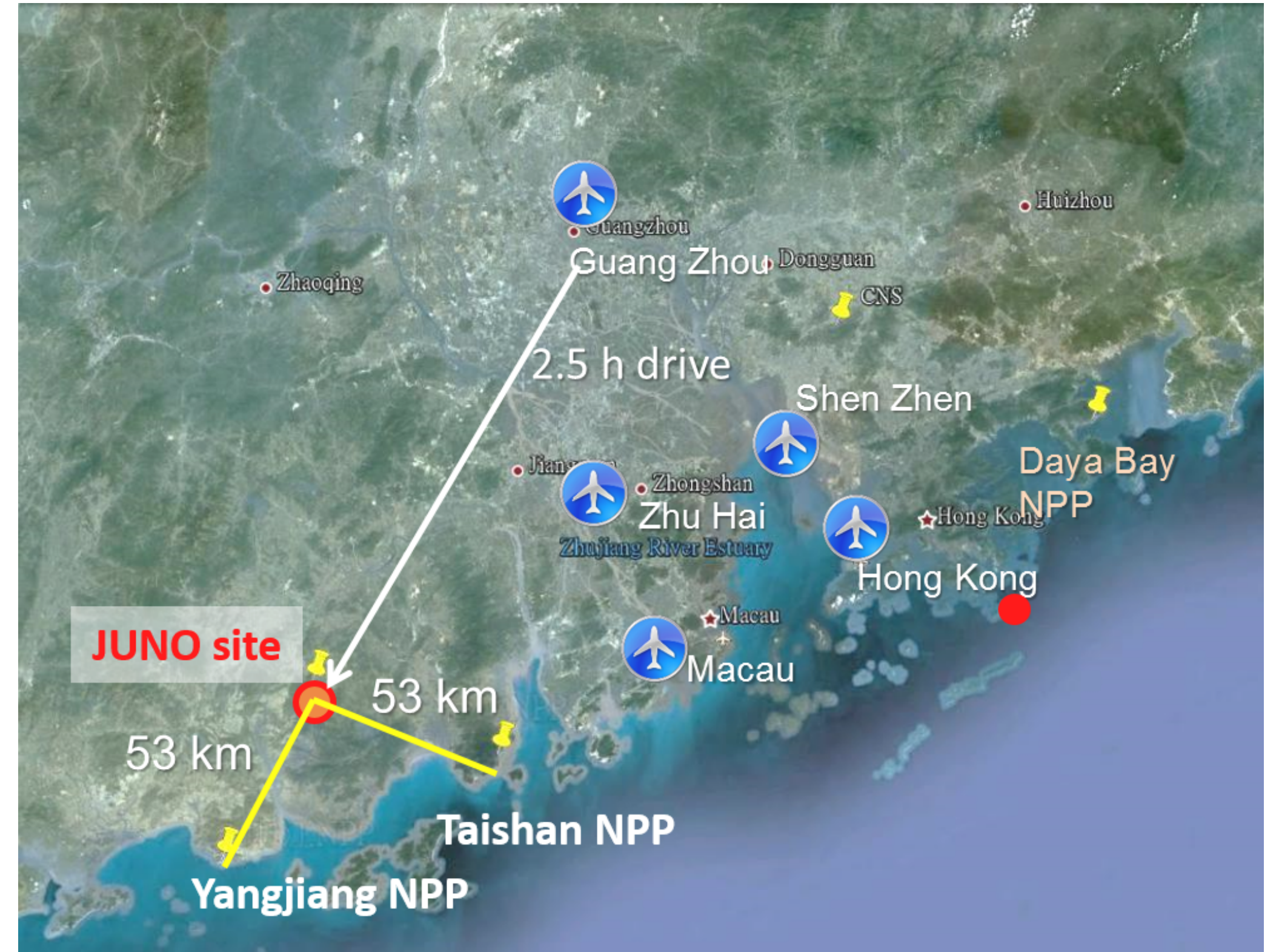


- Answering many unknown problems in neutrino physics
- Studying the neutrino mass hierarchy
- Measuring the neutrino oscillation parameters

“How” Do We Detect a Ghost Particle?

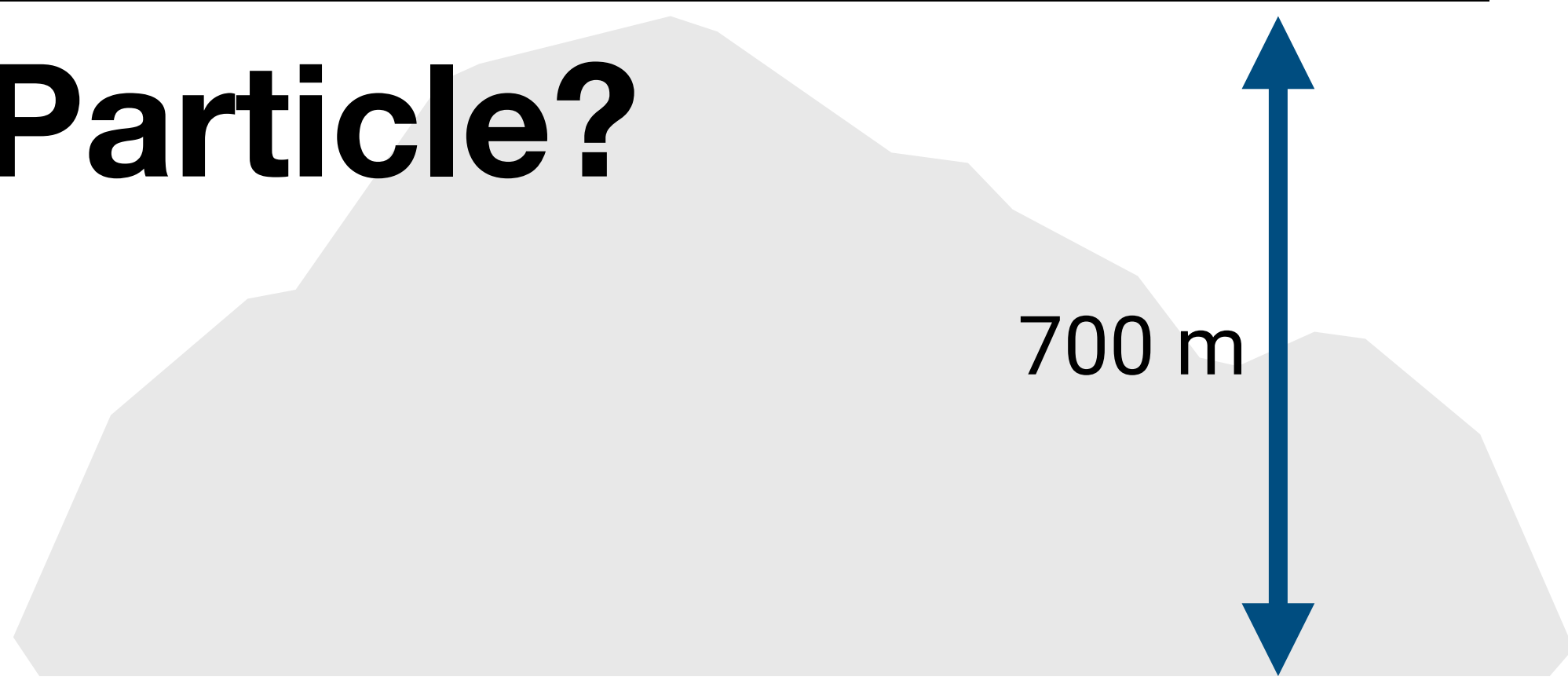
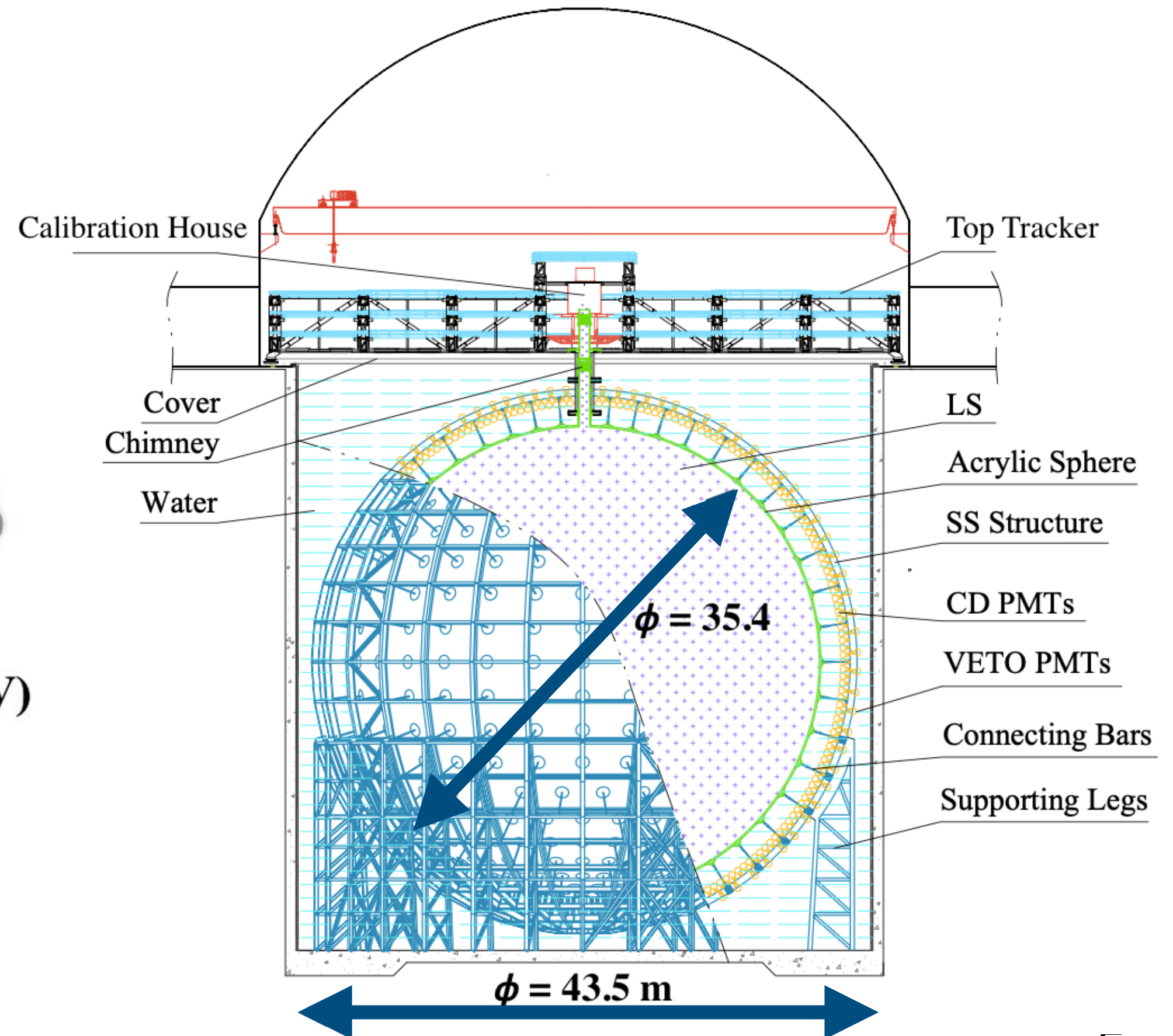
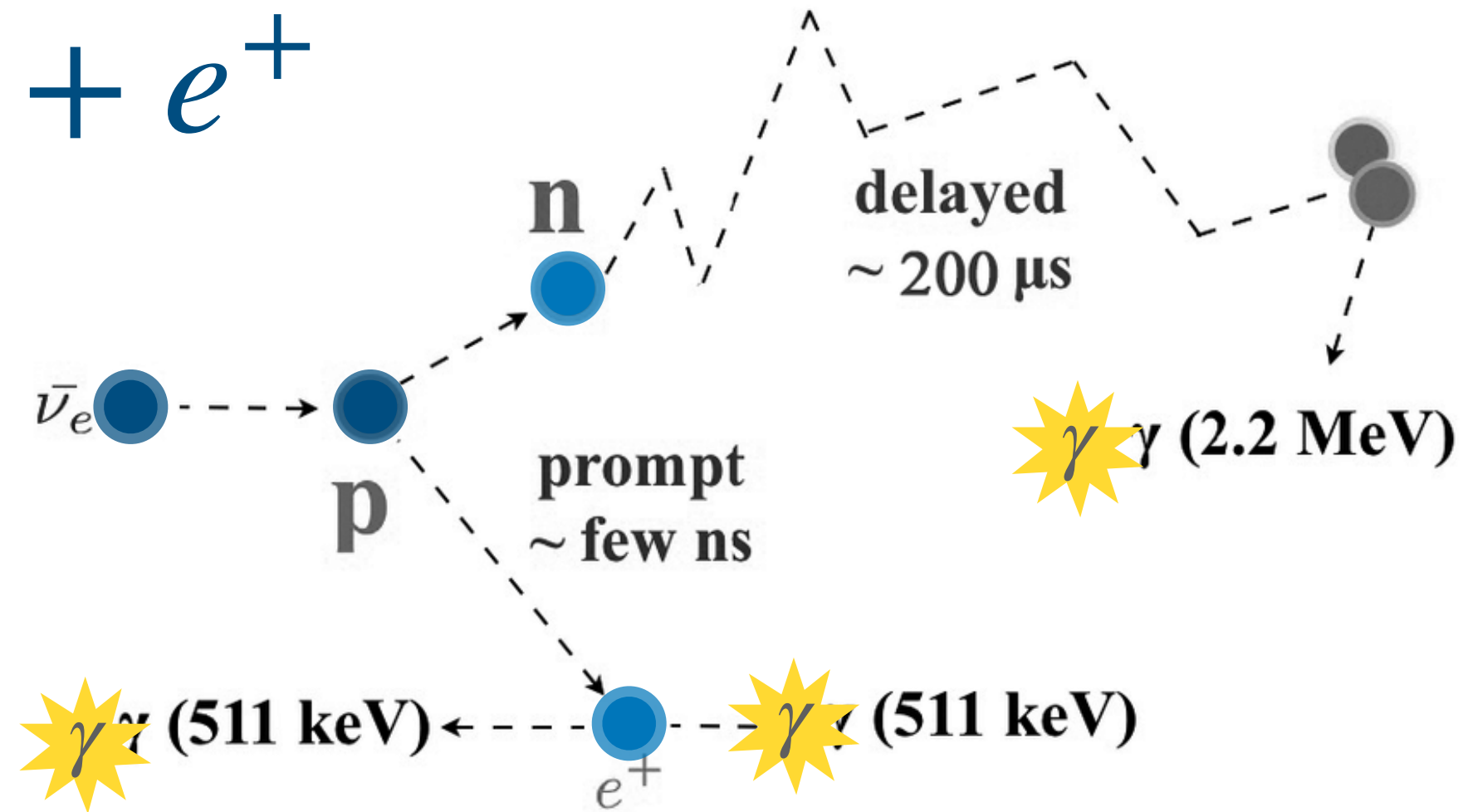
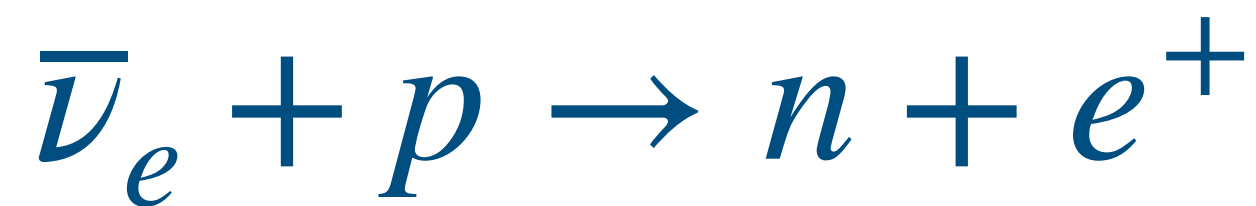
Jiangmen JUNO Underground Neutrino Observatory

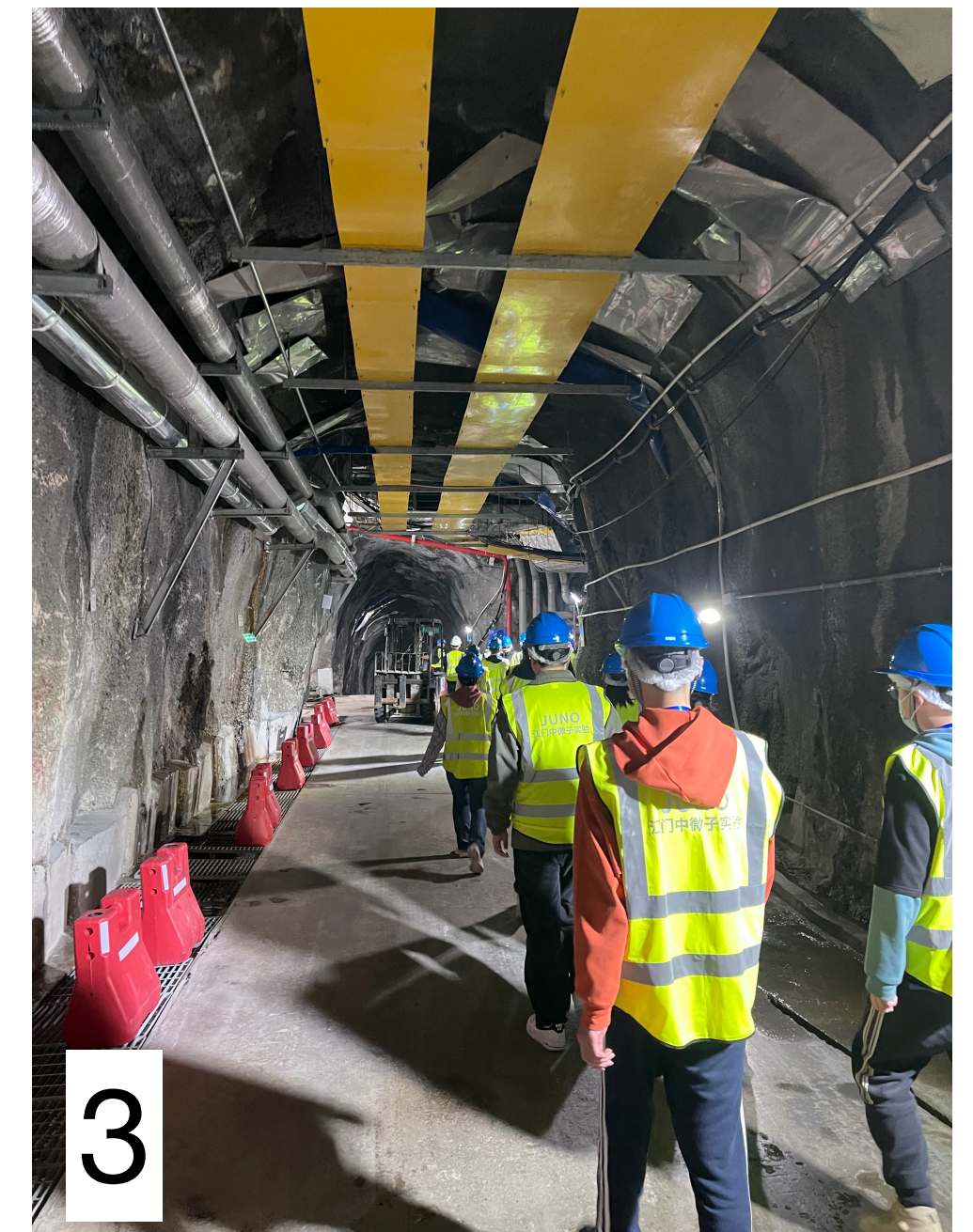
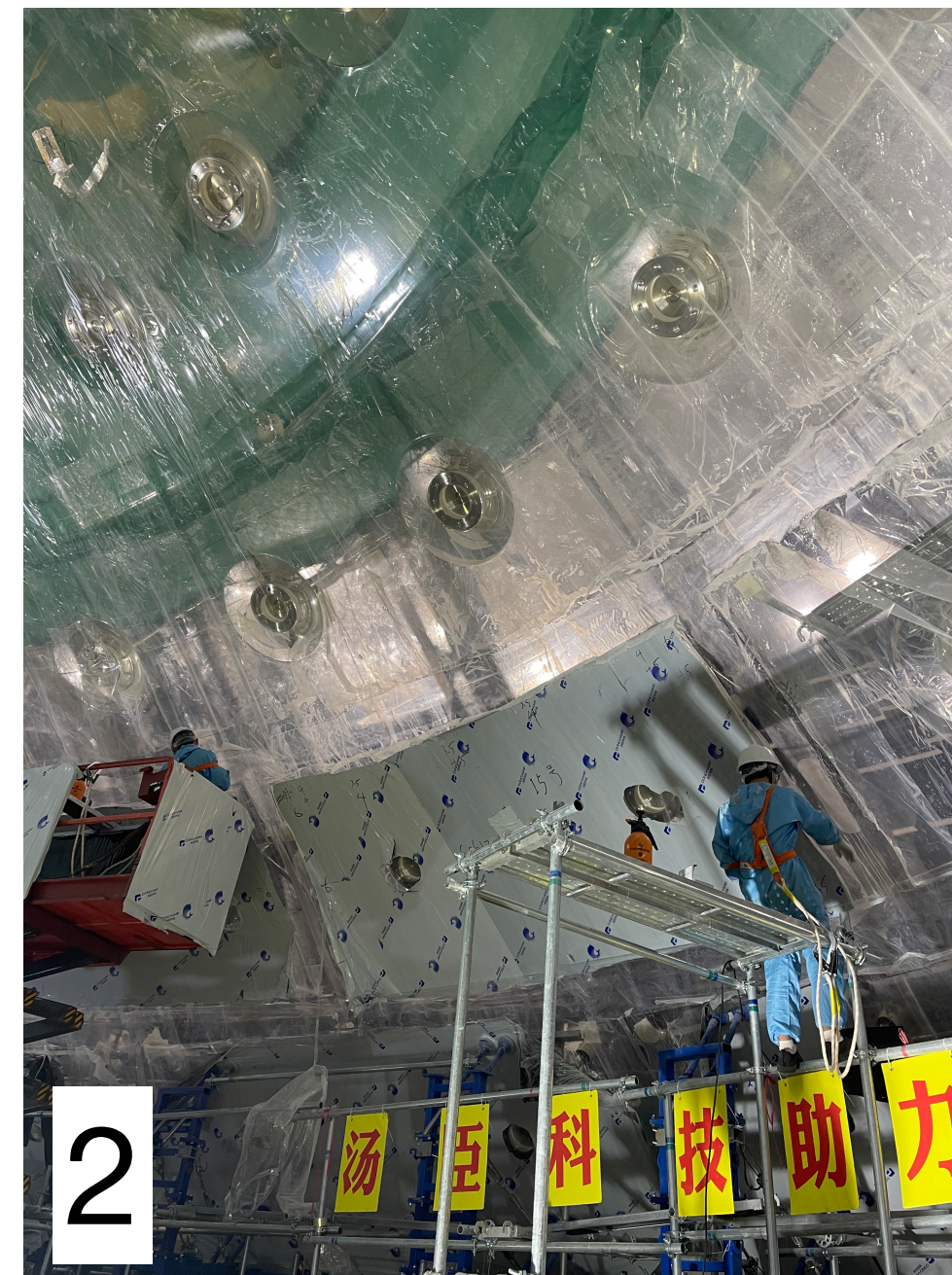
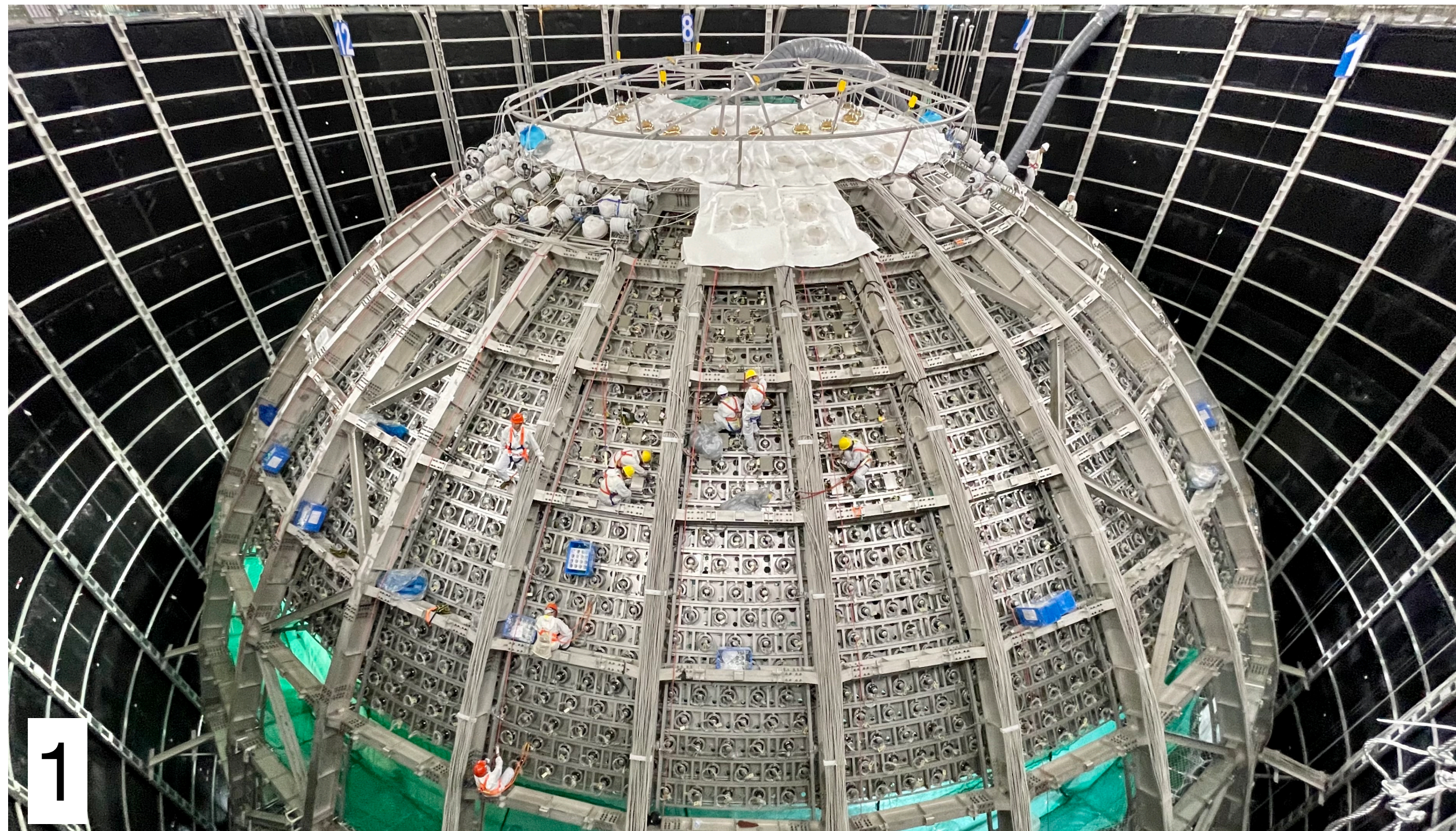
- Under construction, located in Jiangmen, Guangdong
- World largest liquid scintillator detector with high energy resolution of 3% at 1 MeV



“How” Do We Detect a Ghost Particle?

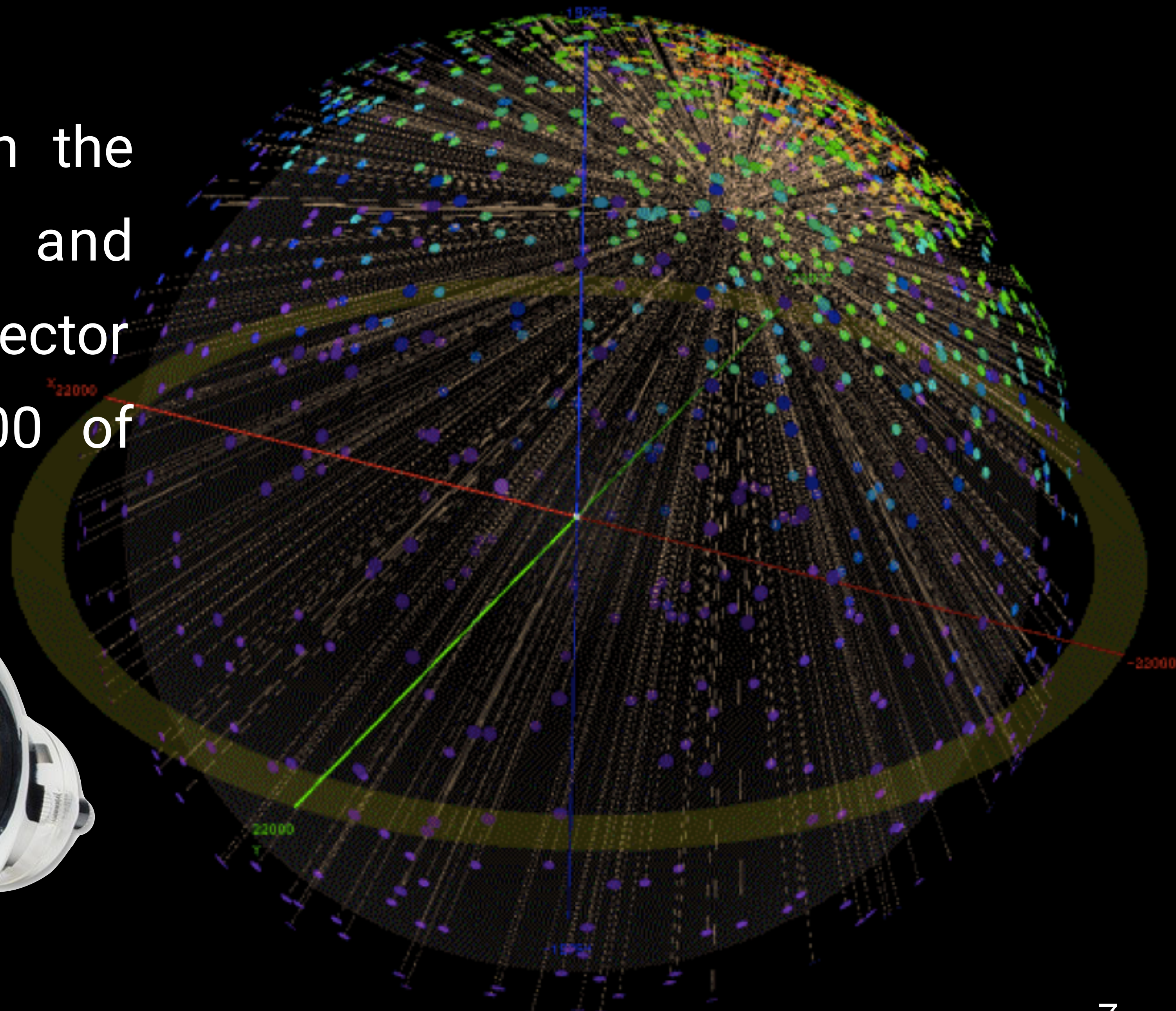
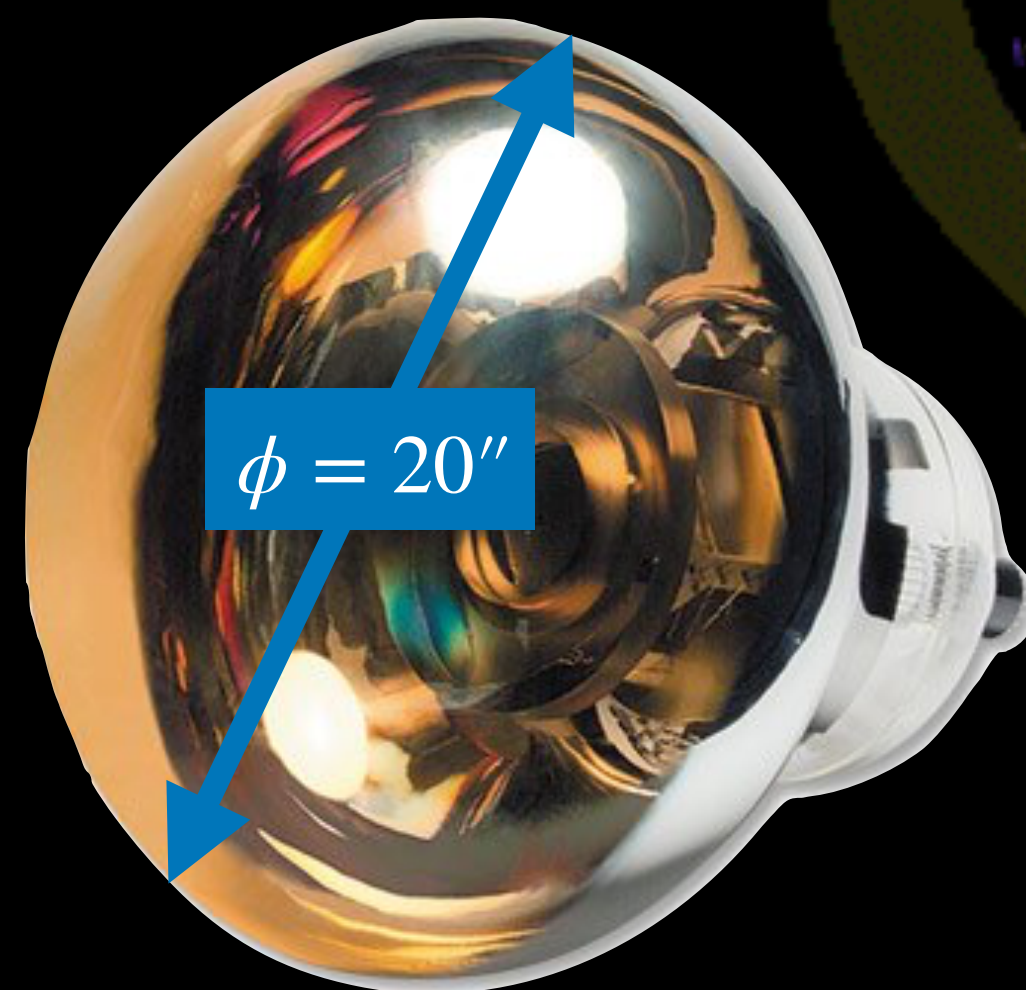
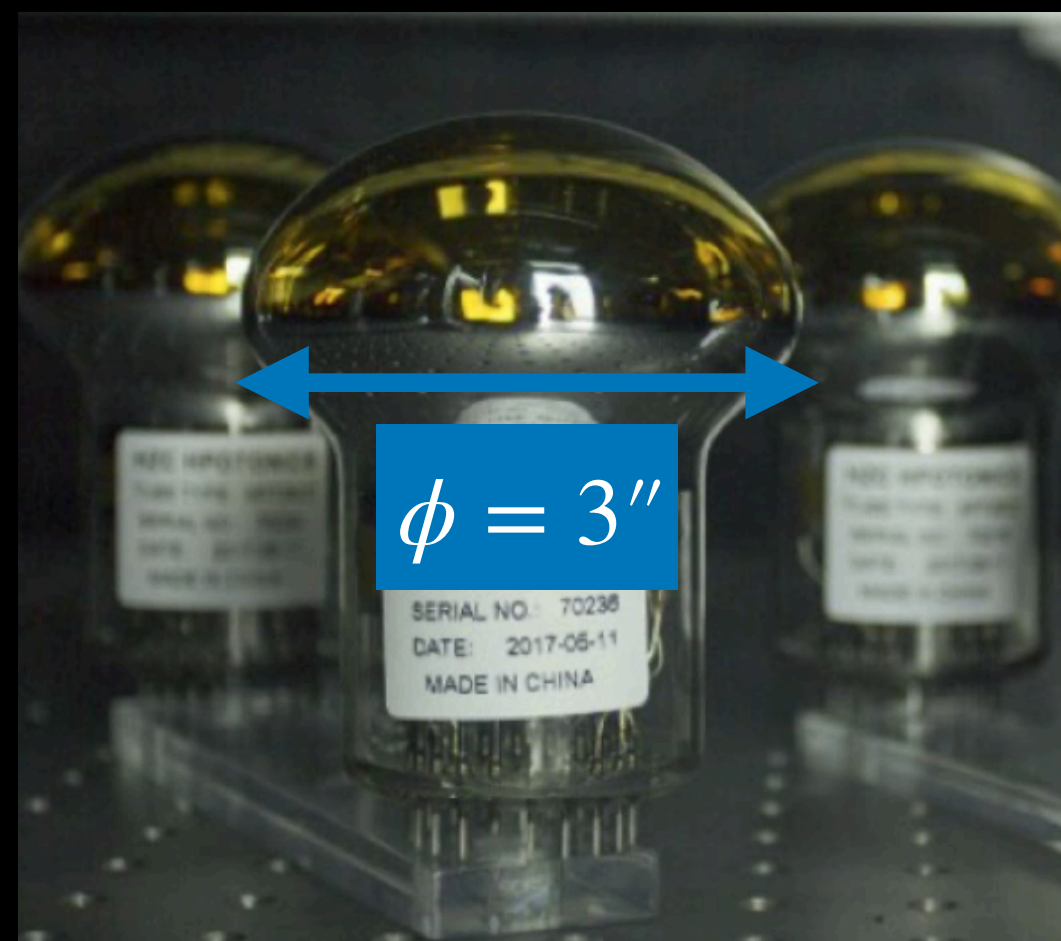
- Increasing the probability with **enormous detector!**
- Indirect detection method
- Light** is the key!





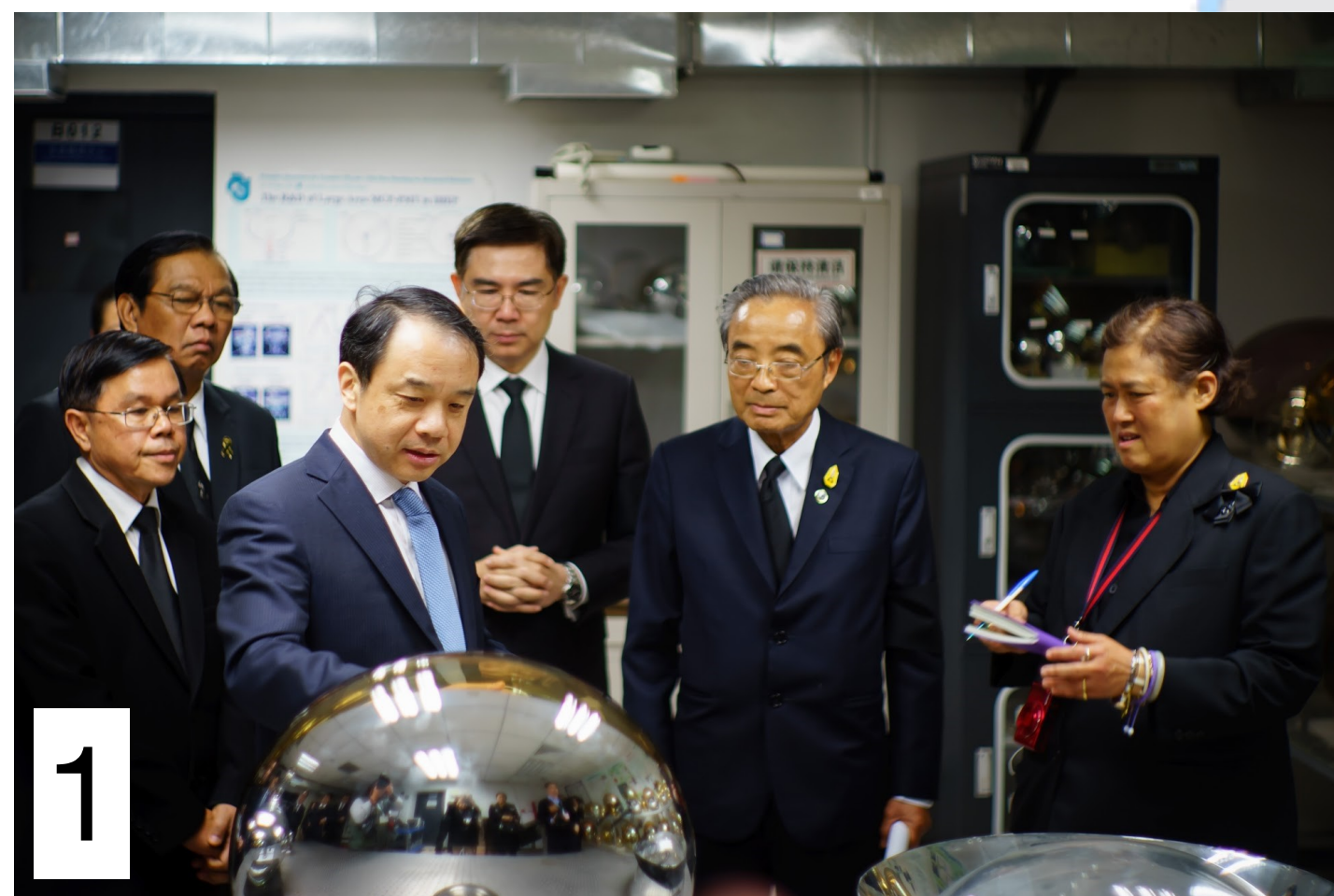
Neutrino has come!

- Neutrino will interact with the liquid scintillator inside and illuminating all over the detector
- Monitoring by over 45,000 of **“Photomultiplier Tubes”**



“Who” is JUNO Collaboration

- Institute of High Energy Physics (IHEP), Beijing
- 75 institutes and 700+ collaborators from 19 countries worldwide
- Thai-JUNO Collaboration
 - Chulalongkorn University
 - Suranaree University of Technology
 - National Astronomical Research Institute of Thailand



“What” Do We Achieve in Return?

Revealing the
New Gate of
Nature
Understanding

Industrial R&D
and Technology
Spinning-off

Fundamental
Knowledge
for Next Level

New Perspectives
and Encourage
the New
Generation



感谢聆听!