



清华大学  
Tsinghua University



# Status and prospect of China Jinping Underground Laboratory (CJPL)

Hao Ma

Tsinghua University

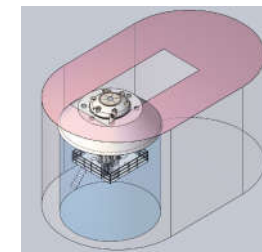
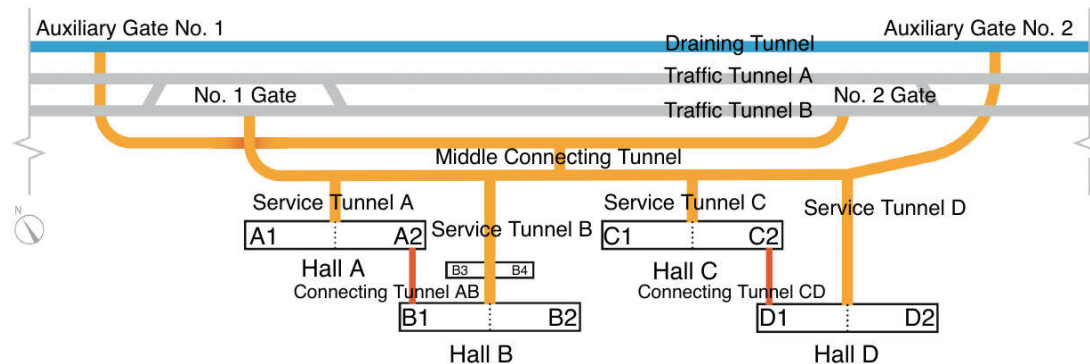
Aug. 30, 2021



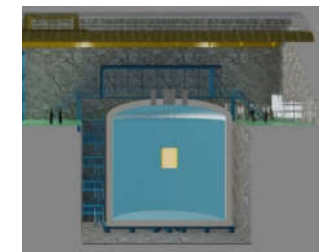
# CJPL-II and DURF Project



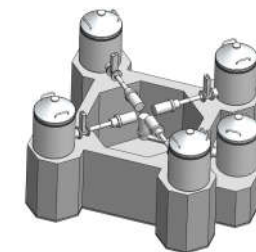
- CJPL-II with rock overburden of 2400 m
  - Total volume: 300k m<sup>3</sup> with 4 main halls of 14x14x130 m (4000 m<sup>3</sup> for CJPL-I)
  - Two exp. pits in hall B2 and C1
- DURF @ CJPL-II
  - **D**eep **U**nderground and ultra-low **R**adiation background **F**acility for frontier physics experiments, TDR approved by government in Nov. 2019
  - Civil engineering started in Dec. 2020, expected to complete in 2024
  - A large pure water vessel in hall B2 (27x15x13m)
  - A large LN<sub>2</sub> tank in hall C1 (Φ13x13 m)
  - Low-background counting facility in hall C2
  - Ground campus in Xichang city



Water vessel



LN<sub>2</sub> tank



Ge assay

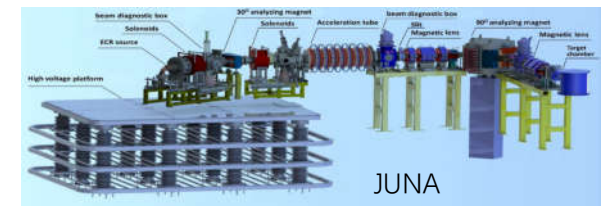
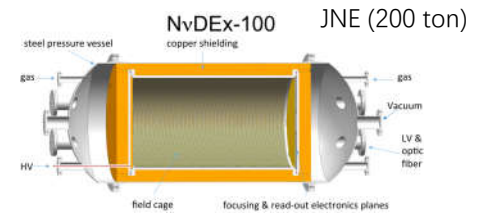
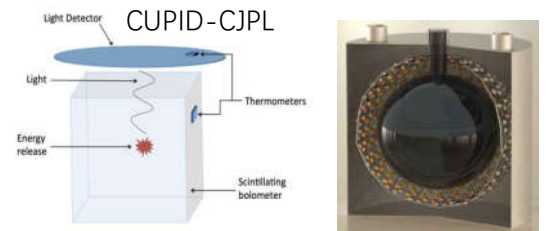
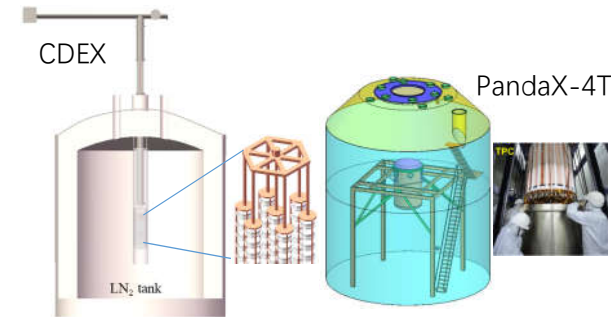


Ground Campus

# Experiments at CJPL



- Dark Matter
  - CDEX-50: ~ 50-kg germanium detector array (Detector testing)
  - PandaX-4T: ~ 4-ton liquid xenon TPC (Commissioning)
- Neutrino-less double beta decay
  - CDEX-300v: ~300-kg enriched germanium detector array (CDR)
  - PandaX-4T: natural liquid xenon TPC
  - CUPID-CJPL:  $^{100}\text{Mo}$ -based scintillation bolometer (Crystal testing)
  - NvDEx: high pressure  $^{82}\text{SeF}_6$  Gas TPC (Prototype development)
- JUNA: accelerator-based nuclear astrophysics exp.
- Jinping Neutrino Experiment: Solar/Geo/Supernova neutrino measurement
- Multidisciplinary research: Underground Radiobiology/Medicine/Geology...
- Welcome to visit our website. <http://cjpl.tsinghua.edu.cn>



Thanks for your attention!

Hao Ma | TAUP2021 | mahao@tsinghua.edu.cn