Qiyu Yan 严启宇

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Education

University of Warwick 2023/06 – 2024/05
Visiting Ph.D. Student Coventry, UK
Supervisor: Prof. Xianguo Lu

University of Chinese Academy of Sciences Since 2021/09
Ph.D. Student in Physics Beijing, China
Supervisor: Prof. Xianguo Lu (Warwick), Prof. Yangheng Zheng

University of Chinese Academy of Sciences 2017/09 – 2021/06
B.Sc. in Physics Beijing, China

- Core Course GPA: **3.88/4.0**

Projects

The Ghent Hybrid Model in NuWro 2023 – Present
Supervisor: Prof. Xianguo Lu

Professor2-Based ReWeight for GENIE 2023 – Present
Supervisor: Prof. Xianguo Lu

B.Sc. Thesis: **Physics Sensitivity Study with GeV Neutrinos in JUNO** 2020 – 2021
Supervisor: Dr. Xianguo Lu (Oxford), Prof. Yangheng Zheng

- Use Honda flux and GENIE generator to predict the event rate and final state particles of atmospheric neutrino interactions in JUNO detector.
- Use Prob3 to calculate the oscillation probability for different oscillation parameters.
- Use GEANT4 to simulate the propagation of final state particles in JUNO detector, to estimate the energy resolution.
- Use estimated energy resolution and angular resolution to calculate the sensitivity of JUNO to neutrino mass ordering problem.

Summer Project: **GEANT4 Based Simulation of Time Projection Chamber** 2019/07 - 2019/09
Supervisor: Dr. Xianguo Lu (Oxford)

- Use GEANT4 to simulate the behavior of different particles going through a TPC detector, record the energy deposit $\mathrm{d}E/\mathrm{d}x$ and track length.
- Observed different Bragg peak behavior from different particles, which may be used to conduct particle identification in TPC detector.
- Observed the dependence on the energy deposit of track length, which may be used to conduct energy measurement in TPC detector.

Collaborations and Roles

- GENIE Collaboration 2023 – Present
  - Develop new ReWeight tool.
- JUNO Collaboration 2021 – Present
  - GANYMEDE PWG: work on GeV generator integration to JUNO software and incorporating up-to-date neutrino interaction models with JUNO.
  - NuWro Task Lead
  - GENIE Task Lead
  - Development of quality control tools for Monte Carlo sample

Conferences

Poster: Jie Cheng, Zhenning Qu, Kaile Wen, Qiyu Yan and Xianguo Lu, *Status of the GANYMEDE Working Group for GeV Physics at JUNO*, **NEUTRINO2022**. Seoul Korea (online) 2022/06