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Reference

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Education

University of Texas at Austin, USA
Experimental Neutrino Physics.
PhD Cancidate, Physics, 2020 (expected).

Vietnam National University, Hanoi, Vietnam
Theoretical Physics.
B.S., Physics, 2012.

Employment

Center of Theoretical Physics, Institute of Physics, Hanoi, Vietnam
Researcher Assistant, September 2012 - March 2014.

Department of Physics, The University of Texas at Austin, USA
Teaching Assistant, 08/14 - 06/17, 01/18-12/19. Courses taught:
- Modern Physics for Engineering Major.
- Modern Physics for Non-Physics Major.
- General Physics for PreMeds.
- General Physics Lab for PreMeds.

Department of Physics, The University of Texas at Austin, USA
Research Assistant, Summer 2015, 06/17 - 01/18, Summer 2018, Fall 2020 - now.

Research

Sterile neutrino search
Involving in data analysis and developing statistical procedures for the MINOS+ (using the electron neutrino appearance channel) and NOvA (using the neutral current) experiments in order to search for the possible existence of sterile neutrinos.

Photo-detection systems
Developing simulations for different detector systems (including the CO2 gaseous Cherenkov counter used in the NOvA Test Beam experiment), with focus on liquid argon systems. Also involving in data analysis for ARAPUCA, a novel approach for the DUNE Photon Detection system.

Silicon Photodetector Front-End Electronics
Design front-end electronics for silicon photo-multiplier (SiPM) devices used in light collection systems. This design has been used as a trigger in the LArIAT (Liquid Argon In A Test Beam) experiment at Fermilab.

NOvA Test Beam
Involving in development (optical and energy-loss simulations, design and commissioning) and operation of the CO_2 Cherenkov threshold counter using used to tag electrons in the test beam. Developed analysis tools for time-of-flight detector, Cherenkov counter. Analysis of beamline PID.

Neutron-Antineutron Oscillation Search
Developed the data driven trigger as well as the analysis tools for the neutron oscillation search in NOvA. This work is my main focus during the graduate school.

Award

Tokyo-Mitsubishi UFJ Foundation Scholarship
Vietnam National University, Fall 2010 - Spring 2011.

Departmental Fellowship
The University of Texas at Austin, Summer 2015.

URA Visiting Scholars, Fall 2017
Fermi National Accelerator Laboratory, August 2017 - January 2018.
Project: Sterile Neutrinos Search in MINOS+ and NOvA Experiments.

URA Visiting Scholars, Fall 2018
Fermi National Accelerator Laboratory, December 2018 - August 2019.
Project: Neutron-Antineutron Oscillation Search in the NOvA Experiments.

PUBLICATION

1. Search for Sterile Neutrinos Mixing with Muon Neutrinos in MINOS,
Phys. Rev. Lett. 117, 151803 (2016),
MINOS Collaboration.

2. Limits on Active to Sterile Neutrino Oscillations from Disappearance Searches in the MINOS, Daya Bay, and Bugey-3 Experiments,
Phys. Rev. Lett. 117, 151801 (2016),
MINOS Collaboration, Daya Bay Collaboration.

3. Measurement of the multiple-muon charge ratio in the MINOS Far Detector,
Phys. Rev. D 93, 052017 (2016),
MINOS Collaboration.

4. Measurement of single π^0 production by coherent neutral current ν-Fe interactions in the MINOS Near Detector,
Phys. Rev. D 94, 072006 (2016),
MINOS Collaboration.

5. A search for flavor-changing non-standard neutrino interactions using ν_e appearance in MINOS,
Phys. Rev. D 95, 012005 (2017),
MINOS Collaboration.

6. Constraints on Large Extra Dimensions from the MINOS Experiment,
Phys. Rev. D 94, 111101 (2016),
MINOS Collaboration.

7. New constraints on oscillation parameters from ν_e appearance and ν_μ disappearance in the NOvA experiment,
Phys. Rev. D 98, 032012 (2018),
NOvA Collaboration.

8. Observation of seasonal variation of atmospheric multiple-muon events in the NOvA Near Detector,
Phys. Rev. D 99, 122004 (2019),
NOvA Collaboration.

9. First measurement of neutrino oscillation parameters using neutrinos and antineutrinos by NOvA,
Phys. Rev. Lett. 123, 151803 (2019),
NOvA Collaboration.

10. A measurement of absolute efficiency of the ARAPUCA photon detector in Liquid Argon,
JINST 15 T06003 (2020),
Dante Totani, Gustavo Cancelo, Flavio Cavanna, Carlos O. Escobar, Ernesto Kemp, Franciole Marinho, Laura Paulucci, Dung D. Phan, and David Warner.

11. Precision Constraints for Three-Flavor Neutrino Oscillations from the Full MINOS+ and MINOS Dataset,
Phys. Rev. Lett. 125 (2020) 13, 131802,
MINOS Collaboration.

12. Improved Constraints on Sterile Neutrino Mixing from Disappearance Searches in the MINOS, MINOS+, Daya Bay, and Bugey-3 Experiments,
Phys. Rev. Lett. 125 (2020) 7, 071801,
MINOS Collaboration, Daya Bay Collaboration.

13. Search for sterile neutrinos in MINOS and MINOS+ using a two-detector fit,
Phys. Rev. Lett. 122 (2019) 9, 091803,
MINOS Collaboration.

Poster

1. Electron Neutrino Appearance Analysis in MINOS+,
APS April Meeting, 27-31 January 2017,
Washington DC, USA.

2. NOvA Test Beam Project,
UT Open House, February 2018,
The University of Texas at Austin, Texas, USA

2. Neutrino Physics in MINOS/MINOS+,
UT Open House, February 2018,
The University of Texas at Austin, Texas, USA

3. The NOvA Test Beam Experiment,
Fermilab Users Meeting, June 2019,
Fermi National Accelerator Laboratory, Illinois, USA