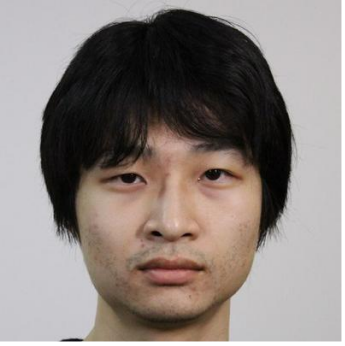

ZHE YANG

Physics PhD Candidate, supervisors: Professor Zhengguo Zhao (USTC) and Professor Bing Zhou (UM)

DETAILS

Contacts
Yichang, China
zhe.yang@cern.ch
(+86) 15256083481

Nationality
China

Date / Place of birth
26/09/1994
Yichang, China

PROFILE

Physics graduate student with strong physics analysis, computing, and mechanical background.

Making a thorough and skillful contribution to relative experiments and analysis.

EDUCATION

PhD Candidate, USTC
SEPTEMBER 2017 — PRESENT

Major in particle physics. Joint education & research at the University of Michigan

Bachelor of Physics, USTC, Hefei
SEPTEMBER 2013 — JUNE 2017

Major in particle physics.

RESEARCH EXPERIENCE

Exclusive Z' + X search, Geneva
JUNE 2020 — PRESENT

The goal of this analysis is to access lower cross-sections or lower mass ranges for new exotic Z' -type resonances decaying into pairs of electrons or muons, by exploiting more exclusive channels such as the production of Z' in VBF, or in association with sterile particles, or in FCNC processes with b-jets(s) in the association. The analysis just started and I'm currently contributing to the analysis framework development and sample studies.

Lepton flavor violation (LFV) analysis, Geneva
JULY 2019 — PRESENT

Lepton Flavor Violating dilepton final state will be tested in this analysis. The physics cases are: (1) LFV Z' in general, (2) sneutriono production decaying with LFV coupling terms, (3) QBH. The shape analysis of the invariant mass will be performed to extract signals. Background estimation techniques of the previous publication will be inherited with improvement with respect to the comments from collaboration given during the approval process. I mainly contributed to the deep neural network study for limit optimization and systematic studies. The studies of this analysis are finalizing and will request EB soon.

HH->bbll analysis, Geneva
MAY 2019 — PRESENT

This analysis is searching for Higgs pair production in bbll final states including di-Higgs decay to bbtautau, bbWW, and bbZZ. Focusing on non-resonant HH production and low mass resonances. For this analysis, I worked on data/MC sample request & validation, background modeling study, framework development, deep neural network study, systematic study and serve as note editor.

sMDT chamber building and cosmic ray study, Ann Arbor
SEPTEMBER 2018 — MARCH 2019

Working on the sMDT chamber R&D. I made the contribution to the chamber construction by performing components' quality tests, DAQ software development, precision measurements, chamber assembling, and other necessary works. Besides, I also performed the cosmic ray test for the chamber resolution study.

Low-mass zprime analysis
SEPTEMBER 2018 — PRESENT

This analysis is searching for a new leptophilic vector boson with the 4-muon events produced under and above the Z mass peak. The experimental signature would be a moderate excess of 4 muon events with a muon pair peaking around the Z' mass. Such new gauge boson Z' is predicted by the highly motivated gauged L_mu-L_tau models. I mainly contributed to the sample validation, background study, and the MVA optimizations using a parameterized deep neural network method with Keras and TensorFlow. Currently, the analysis is in the requesting EB stage.

sMDT prototype R&D (undergraduate thesis), Ann Arbor
FEBRUARY 2017 — AUGUST 2017

The monitored drift tube (MDT) chamber is one of the fundamental detectors in the ATLAS muon system. The upgrade from MDT to sMDT (small-diameter MDT) will improve the L1 trigger efficiency and maintain excellent spatial resolution. I took part in the early R&D for the first sMDT prototype chamber build at the University of Michigan. Contributed to lab infrastructure setup, glue machine design (including mechanical drawing), control program coding (C/C++ & LabVIEW), Besides, performed quality test for the chamber parts with high precision and electronic modules.

WA-105 experiment, Geneva
JULY 2016 — AUGUST 2016

The WA-105 experiment serves as a demonstration for the liquid argon double-phase time projection chamber (DLAr) which was used for the Long-Baseline Neutrino Observatory (LBNO). I participated in the project as a summer student. Performed some studies on Large Electron Multipliers (LEM) spark tests. (LEM provides amplification before the charge collection onto an anode plane with strip readout) Besides, I also worked on gain measurement, and gas components' influence on scintillation light.

AWARDS AND CERTIFICATES

China Scholarship Council (CSC) scholarship, Hefei
SEPTEMBER 2018 — MARCH 2019

Certified LabVIEW Developer, Shanghai
JULY 2018

Certified LabVIEW Associate Developer, Shanghai
DECEMBER 2017

Scholarship for Outstanding Students (Golden Prize), Hefei
NOVEMBER 2015

Admitted to Yan Jici Talent Class, Hefei
SEPTEMBER 2015

National Mathematics Competition for Undergraduate students (3rd Prize), Hefei
MAY 2014

SKILLS

C/C++

Python

LabVIEW

AutoCAD

LANGUAGES

English

Chinese

Japanese