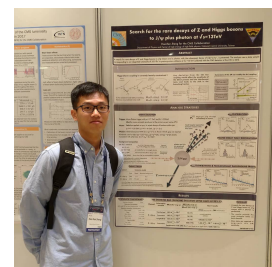


Curriculum Vitae

Personal Information

Name Hao-Ren Jheng (Chinese: 鄭皓仁)
Date of Birth June 21th, 1995
Address No. 200, Jichang 2nd St., Ji'an Township, Hualien County, Taiwan
Mobile +886 934387977
Email haorenjheng21@gmail.com



Education

- Sep 2017 – Jun 2019 **National Central University Jhongli, Taiwan**
M.S in Physics
Title of the M.S thesis: *Search for rare decays of Z and Higgs bosons to J/ψ and a photon in proton-proton collisions at $\sqrt{s} = 13$ TeV*
- Sep 2013 – Aug 2017 **National Central University Jhongli, Taiwan**
B.S. in Physics

Experiences

- Jun 2019 **Teaching assistant** – *Machine Learning in High Energy Physics*
 - Providing students clear instructions to learn ROOT (a scientific software toolkit widely used in experimental particle physics) and TMVA (Toolkit for Multivariate Data Analysis)
- Sep 2018 – Dec 2018 **Research assistant** based at CERN (European Organization for Nuclear Research)
 - Participating in the beamtest for future upgrade of Compact Muon Solenoid (CMS), High Granularity Calorimeter (HGCAL), and working on the energy reconstruction and electron identification using BDT (Boosted Decision Tree) method
 - Electron veto efficiency and scale factor measurement for data collected in 2017 and 2018
- Sep 2017 – Jun 2018 **Teaching assistant** – *Experimental Method and Experimental Physics*
 - Guiding students on designing experimental setup, building up workflow in an experiment, analyzing and interpreting data, giving oral presentation, and writing report in paper form
- Jul 2015 – Aug 2015 **Summer student** – *UCAT (University Consortium of ALMA-Taiwan) Summer Student Program*

Selected publications & Oral presentations

Papers

- Search for rare decays of Z and Higgs bosons to J/ψ and a photon in proton-proton collisions at $\sqrt{s} = 13$ TeV**, Eur. Phys. J. C 79 (2019)94, CMS-SMP-17-012, CERN-EP-2018-250, DOI: 10.1140/epjc/s10052-019-6562-5, [arXiv:1810.10056]
 - Contact person in CMS internal review process
- Search for the decay of a Higgs boson in the $\ell\ell\gamma$ channel in proton-proton collisions at $\sqrt{s} = 13$ TeV**, JHEP 11 (2018) 152, CMS-HIG-17-007, CERN-EP-2018-092, DOI: 10.1007/JHEP11(2018)152, [arXiv:1806.05996]
 - Mainly working on the trigger efficiency of the Higgs Dalita decay channel and the background model
- Beam tests of prototype silicon modules for the CMS High Granularity Endcap Calorimeter**, JINST 13 (2018) no.10, P10023, FERMILAB-CONF-18-595-CMS, DOI: 10.1088/1748-0221/13/10/P10023
 - Taking shifts in beamtest to monitor the data taking

Poster presentations

- 1 **Rare decays of the Higgs boson in the $\ell\ell\gamma$ final states in pp collisions at $\sqrt{s} = 13$ TeV**, 2019 Annual Meeting of the Physical Society of Taiwan, National Chiao Tung University, Hsinchu, Taiwan [[link to pdf](#)]
- 2 **Search for Z and Higgs boson decaying into $J/\psi + \text{photon}$ in pp collisions at 13 TeV**, 39th International Conference on High Energy Physics (ICHEP) 2018, Seoul, Korea [[link to pdf](#)]
- 3 **Study of Z and Higgs boson decaying into $(J/\psi)\gamma$ in pp collisions at $\sqrt{s} = 13$ TeV**, 2018 Annual Meeting of the Physical Society of Taiwan, National Taiwan University, Taipei, Taiwan [[link to pdf](#)]
- 4 **Study of a Higgs boson decaying into a $J/\psi + \gamma$ in pp collisions at $\sqrt{s} = 13$ TeV**, Annual Meeting of the Physical Society of the Republic of China (Taiwan) 2017, Tamkang University, Taipei, Taiwan [[link to pdf](#)]
- 5 **Study of a Higgs boson decaying into $J/\psi + \gamma$ in pp collisions at $\sqrt{s} = 13$ TeV**, Annual Meeting of the Physical Society of the Republic of China 2016, National Sun Yat-Sen University, Kaohsiung, Taiwan [[link to pdf](#)]

Oral presentations

- 1 **Searches for rare decays of the Higgs boson at CMS**, Phenomenology Symposium 2019, University of Pittsburgh [[link to my talk or pdf](#)]
- 2 **Study of Higgs and Z boson decaying into $J/\psi + \gamma$ in pp collisions at $\sqrt{s} = 13$ TeV**, Taiwan Korea joint workshop on particle physics 2017, Seoul National University [[link to pdf](#)]

Talks given in the CMS meetings

Pre-approval and approval talks for one analysis, Higgs physics (HIG) and standard model physics (SMP) analysis group and subgroup meetings, electron-photon object physics group meeting

Awards

- 2019 **Excellent Graduate Thesis Award, The Physics Society of Taiwan**
Awarded to graduate or PhD students graduated in physics-related fields from domestic universities and colleges
- 2017, 2019 **The Phi Tau Phi Scholastic Honor Society of the Republic of China (2 times)**
Awarded to up to 1% of undergraduate graduands or 3% of master's graduands in every domestic university that are excellent in academic performance as well as moral conduct
- 2018 **FOCI Fiber Optic Communications, Inc. Scholarship**
Financial assistance for students studying, doing research, and attending conferences abroad
- 2017 **Excellent Poster Award**, Annual Meeting of the Physical Society of the Republic of China (Taiwan) 2017, Tamkang University, Taipei, Taiwan
- 2017 **SYSAGE Technology Scholarship**
Financial assistance for students studying, doing research, and attending conferences abroad
- 2016 **Zhu-Shun Yi He Qin Scholarship**
Awarded to twelve students with most outstanding academic performance in the school (two students in College of Science)
- 2013 – 2017 **Academic Excellence Award (7 times)**
Awarded to students with the top 5% GPA for that semester

Skills

Language Chinese (native), English (fluent)
Programming/Software C, C++ (ROOT), Python (including PyROOT), LaTeX