

Wei-Chih Huang

Education

Aug. 2019 – *PhD in Physics*
Aug. 2025 **Texas A&M University, US**
Aug. 2015 – *BS in Physics*
Jun. 2019 **National Tsing Hua University, Taiwan**

Fields of Interest

Dark Matter, High Energy Physics (phenomenology), Nuclear Physics, Neutrino Physics

Professional Experience

Aug. 2019 – **Grauate Research Assistant**
present *Physics & Astronomy department, Texas A&M University, US*

- Design and calculate the structure of various kinds of nuclei by FORTRAN, MPI/OpenMP, Python, and Mathematica
- Construct models for dark matter and axion and the interaction with nuclei
- Programmed Python to do data analysis and statistical analysis

Nov. 2017 – **Inflation and Late-time Acceleration in $f(R)$ Gravity Theory**
Jun. 2019 *Physics department, National Tsing Hua University, Taiwan*

- Formalized the evolution of the universe by $f(R)$ modified gravity
- Programmed Mathematica and Python to stimulate the evolution of the universe

Jul. 2018 – **Dark Matter in Merging Galaxies**
Aug. 2018 *The University Consortium of ALMA–Taiwan*

- Did data analysis and data visualization on dark matter around Galactic center
- Used CASA to clean, analyze and visualize the data imaging from extragalactic database, and infer the dark matter distribution
- Automated the entire analysis process by Python

Publications

Indirect detection of dark matter absorption in the Galactic Center inspireHEP

Apr. 2024 Kimberly K. Boddy, Bhaskar Dutta, Addy J. Evans, **Wei-Chih Huang**, Stacie Moltner, Louis E. Strigari

Prospects for Light Dark Matter Searches at Large-Volume Neutrino Detectors inspire-HEP

Feb. 2024 Bhaskar Dutta, **Wei-Chih Huang**, Doojin Kim, Jayden L. Newstead, Jong-Chul Park, Iman Shaukat Ali

- Short Baseline Neutrino Anomalies at Stopped Pion Experiments** inspireHEP
 Oct. 2023 Iain A. Bisset, Bhaskar Dutta, *Wei-Chih Huang*, Louis E. Strigari
- Probing the dark sector with nuclear transition photons** inspireHEP
 Feb. 2023 Bhaskar Dutta, *Wei-Chih Huang*, Jayden L. Newstead
- Inelastic nuclear scattering from neutrinos and dark matter** inspireHEP
 Dec. 2022 Bhaskar Dutta, *Wei-Chih Huang*, Jayden L. Newstead, Vishvas Pandey
- Axion-Like Particle Production at Beam Dump Experiments with Distinct Nuclear Excitation Lines** inspireHEP
 Aug. 2022 Loyd Waites, Adrian Thompson, Adriana Bungau, Janet M. Conrad, Bhaskar Dutta, *Wei-Chih Huang*, Doojin Kim, Michael Shaevitz, Joshua Spitz

Talks

- Apr. 2023 **Interplay of Nuclear, Neutrino and BSM Physics at Low-Energies**
 Probing BSM particles using inelastic nuclear scattering
- Oct. 2022 **Particle Physics on the Plains**
 Inelastic Dark Matter-Nucleus Scattering in Stopped-pion Experiments using Transition Photons
- May. 2022 **2022 Phenomenology Symposium**
 Inelastic neutrino-nucleus and dark matter-nucleus scattering
- Jul. 2021 **2021 Meeting of the Division of Particles and Fields of the American Physical Society (DPF21)**
 The calculation of inelastic neutrino-nucleus scattering
- Oct. 2021 **2021 Magnificent CEvNS Workshop**
 Inelastic neutrino-nucleus and dark matter-nucleus scattering

Teaching Experience

- 2022 – **TAMU Physics Department**
- 2023 Workshop Lecturer: Data Science in Physics (webpage)
- Fall 2022 **TAMU Physics 207, Electricity and Magnetism for Engineering and Science**
 Teaching Assistant
- Summer 2022 **TAMU Physics 207, Electricity and Magnetism for Engineering and Science**
 Teaching Assistant (Lab)
- Spring 2022 **TAMU Physics 207, Electricity and Magnetism for Engineering and Science**
 Teaching Assistant

- Fall 2021 **TAMU Physics 206, Newtonian Mechanics for Engineering and Science**
Teaching Assistant
- Spring 2021 **TAMU Physics 207, Electricity and Magnetism for Engineering and Science**
Teaching Assistant
- Fall 2020 **TAMU Physics 207, Electricity and Magnetism for Engineering and Science**
Teaching Assistant
- Spring 2020 **TAMU Physics 206, Newtonian Mechanics for Engineering and Science**
Teaching Assistant
- Fall 2019 **TAMU Physics 408, Thermodynamics and Statistical Mechanics**
Teaching Assistant (grader)
- Spring 2016 **Shu Guang Girls' Senior High school**
Teaching Assistant

--- Honors and Awards

Data Science Ambassador Scholarship

- Fall 2022 Data Science Ambassador Scholarship Program at Texas A&M Institute of Data Science

Undergraduate Research Scholarship

- Fall 2018 Scholarship for the $f(R)$ gravity project

Three Years Tsing Hua University Scholarship (2% acceptance rate)

- 2015 - 2018 Tuition waiver, including housing and textbooks

--- Programming Skills

Python, NumPy, Pandas, Matplotlib, SciPy, PyTorch, TensorFlow
Bash, Git, GitHub, Docker, Mathematica, Javascript, LaTeX