Tony Menzo

University of Cincinnati — Geology/Physics Building
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Current position

January 2020 – Present —*PhD candidate*, University of Cincinnati, GPA: 4.0/4.0
Advisor: Dr. Jure Zupan

Education

2014 – 2019 — Bachelor of Arts and Sciences in Physics, The Ohio State University
Minors in Earth Science (Geophysics) and Philosophy
Mentor: Dr. Stuart Raby

Areas of Specialization and Interest

High Energy Physics — Phenomenology
Computational physics, machine learning, simulated hadronization, gauge/gravity duality, model building

Awards

April – August 2022 — Technion - Israel Institute of Technology visiting research student: Sandwich Scholarship ($10,000$)

January 2023 — University of Cincinnati Physics poster competition, 1^{st} place (300)

October 2023 – April 2024 — DOE SCGSR fellowship recipient, Lawrence Berkeley National Lab ($21,600$)

April 2024 – July 2024 — URA Visiting Scholar's Program awardee, Fermi National Accelerator Laboratory ($8,000$)

Presentations

May 2022 — Technion HEP Journal Club, Technion - Israel Institute of Technology, Haifa, Israel

July 2022 — Rethinking beyond the Standard Model Summer school, Institute for Scientific Studies, Cargese, Corsica

October 2022 — AI4EIC Workshop, online

November 2022 — PIKIMO conference, University of Cincinnati, Cincinnati, OH

November 2022 — QCD@LHC workshop, Paris-Saclay University, Orsay, France

March 2023 — DIS2023 workshop, Michigan State University, East Lansing, Michigan

April 2023 — PIKIMO conference, Ohio State University, Columbus, OH

May 2023 — Phenomenology 2023, University of Pittsburgh, Pittsburgh, PA

September 2023 — IAIFI Journal Club, MIT, Boston, MA

October 2023 — ATLAS Theory Lunch Seminar, LBNL, Berkeley, CA

Teaching

2015 – 2019 — Tutor in Physics[a,b] and Mathematics[a]
a. Office of Diversity and Inclusion, Ohio State University
b. Ohio State University Physics Department

Summer 2019 — Physics Instructor
Upward Bound, Columbus State Community College

2020 – 2021 — Teaching Assistant
University of Cincinnati – Physics Department

Workshops/Schools

January 2021 — GGI Lectures on Fundamental Interactions (online)

June 2021 — ICTP Summer School on Particle Physics (online)

June 2021 — Pre-strings: Preparatory School for Strings 2021 (online)

August 2021 — Les Houches 2021: Dark Matter (online)

October 2021 — School on Superstring Theory and Related Topics (online)

July 2022 — Rethinking beyond the Standard Model Summer school, Institute for Scientific Studies, Cargese, Corsica

November 2022 — QCD@LHC, Paris-Saclay University, Orsay, France

March 2023 — DIS2023 workshop, Michigan State University, East Lansing, Michigan

June 2023 — Holography@25, ICTP, Sao Paulo, Brazil

November 2023 — Theory Meets Experiments: The high intensity frontier of particle physics, Galileo Galilee Institute, Florence, Italy

Publications/Preprints

March 2022 — Phil Ilten, **Tony Menzo**, Ahmed Youssef, Jure Zupan, "Modeling hadronization using machine learning". SciPost Physics, 14(3), 027 (2023). [arXiv:2203.04983]

April 2022 — Reuven Balkin, Eric Madge, **Tony Menzo**, Gilad Perez, Yotam Soreq, Jure Zupan, "On the implications of positive W mass shift." Journal of High Energy Physics 2022.2204.05992 (2022): 1-19. [arXiv:2204.05992]

January 2023 — Adam Davis, **Tony Menzo**, Ahmed Youssef, Jure Zupan, "The earth mover's distance as a measure of CP violation." Journal of High Energy Physics 2023.6 (2023): 1-42. [arXiv:2301.13211]

June 2023 — Matheus Hostert, **Tony Menzo**, Maxim Pospelov, Jure Zupan, "New physics in multi-electron muon decays." Journal of High Energy Physics 2023.10 (2023): 1-22. [arXiv:2306.15631]

August 2023 — Christian Bierlich, Phil Ilten, **Tony Menzo**, Stephen Mrenna, Manuel Szwec, Ahmed Youssef, Jure Zupan, "Reweighting Monte Carlo Predictions and Automated Fragmentation Variations in Pythia 8." [arXiv:2308.13459]

November 2023 — Christian Bierlich, Phil Ilten, **Tony Menzo**, Stephen Mrenna, Manuel Szwec, Ahmed Youssef, Jure Zupan, "Towards a data-driven model of hadronization using normalizing flows."

In preparation:

- "Effective theory predictions for $\mu \to e$ conversion"
- "Flavorful low-scale leptogenesis"
- "Detecting ALPs at nuclear fusion facilities"
- "Extracting γ with likelihood estimation"

- "Modeling many-body decays with normalizing flows"
- "Holographic hadronization"
- "Warped EFTs and Wilson-Maldacena loops"