



Jui-Jen (Ryan) WANG
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Department of Physics and Astronomy

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PROFESSIONAL APPOINTMENT

- **Assistant Professor** *Department of Physics and Astronomy*
University of Alabama Aug. 2021 - Present
– Experimental Particle Physics
- **Research Fellow** *Department of Physics*
University of Michigan Sep. 2020 - Aug. 2021
– LZ Collaboration - DM physics, coordinating Outer Detector construction, shift manager for LZ construction
- **Postdoctoral Researcher** *Department of Physics*
Brandeis University Oct. 2017 - Aug. 2020
– LZ Collaboration - DM physics, coordinating Outer Detector construction, coordinating TPC assembly in Surface Assembly Laboratory

GRANT: CURRENT TOTAL OF \$416K

- **30T Water-based Liquid Scintillator Demonstrator** *2023-2026*
BNL subcontract Funding: \$100k
- **Participation in LZ, Towards the Next Generation of Experiments** *2023 - 2026*
Department of Energy Funding: \$251k
- **Operation and Maintenance of Lux-Zeplin experiment** *2022 - 2025*
LBNL subcontract Funding: \$65k

EDUCATION

- **University of New Mexico, Albuquerque, NM** *2017*
Ph.D in Physics Advisor: Michael Gold
- **University of New Mexico, Albuquerque, NM** *2013*
M.Sc in Physics Advisor: Michael Gold

POSITIONS OF RESPONSIBILITY

- **Convener of Veto working group, LZ collaboration** *Feb. 2022 - Oct. 2023*
- **Outer Detector Coordinator(D.O.E L3 Manager), LZ collaboration** *Oct. 2019 - Mar. 2021*
- **Surface Assembly Laboratory (SAL) Coordinator, LZ collaboration** *May. 2019 - Sep. 2019*

PUBLICATIONS

1. UA-BNL collaboration, *Design, construction, and operation of a 1-ton Water-based Liquid scintillator detector at Brookhaven National Lab*, arXiv:2403.13231v1
2. LZ collaboration, *First Constraints on WIMP-Nucleon Effective Field Theory Couplings in an Extended Energy Region From LUX-ZEPLIN*, arXiv:2312.02030
3. LZ collaboration, *Search for New Physics in Low-Energy Electron Recoils from the first LUX-ZEPLIN Exposure*, Phys. Rev. D 108, 072006
4. LZ collaboration, *Background Determination for the LUX-ZEPLIN (LZ) Dark Matter Experiment*, Phys. Rev. D 108, 012010
5. J Aalbers et al , *A Next-generation liquid xenon observatory for dark matter and neutrino physics*, J. Phys. G: Nucl. Part. Phys. 50 01300.1
6. LZ collaboration, *First Dark Matter Search Results from the LUX-ZEPLIN (LZ) Experiment*, Phys. Rev. Lett. 131, 041002
7. LZ collaboration, *Cosmogenic production of ^{37}Ar in the context of the LUX-ZEPLIN experiment*, PhysRevD.105.082004

8. M. Yeh et al., *Materials for Future Calorimeters*, arxiv.2203.07154
9. LZ collaboration, *Projected sensitivity of the LUX-ZEPLIN (LZ) experiment to the two-neutrino and neutrinoless double beta decays of ^{134}Xe* , Phys. Rev. C 102, 014602
10. LZ collaboration, *Projected sensitivities of the LUX-ZEPLIN (LZ) experiment to new physics via low-energy electron recoils*, Phys. Rev. D 104, 092009
11. LZ collaboration, *Enhancing the sensitivity of the LUX-ZEPLIN (LZ) dark matter experiment to low energy signals*, arXiv:2101.08753, 2021
12. LZ collaboration, *The LUX-ZEPLIN (LZ) radioactivity and cleanliness control programs*, Eur. Phys. J. C, Vol. 80,1044
13. LZ collaboration, *The LUX-ZEPLIN (LZ) experiment*, NIM A, Vol. 953, 163047 (2020)
14. LZ collaboration, *Simulations of Events for the LUX-ZEPLIN (LZ) Dark Matter Experiment*, Astroparticle Physics, Vol. 125, 2021,102480
15. LZ collaboration, *Projected sensitivity of the LUX-ZEPLIN experiment to the $0\nu\beta\beta$ decay of ^{136}Xe* , PhysRevC.102.014602
16. LZ collaboration, *Measurement of the gamma ray background in the Davis cavern at the Sanford Underground Research Facility*, Astroparticle Physics, Vol. 116, 102391 (2019)
17. MiniCLEAN collaboration (Jui-Jen Wang*), *Triplet Lifetime in Gaseous Argon*, Eur. Phys. J. A (2019) 55: 176
18. TEXONO Group, *Characterization and performance of germanium detectors with sub-keV sensitivities for neutrino and dark matter experiments.*, Nuclear Instruments and Methods in Physics Research Section A, Vol. 836, 67-82 (2016)
19. MiniCLEAN collaboration, *Improving photoelectron counting and particle identification in scintillation detectors with Bayesian techniques.*, Astroparticle Physics, Vol. 65, 40-54 (2015)
20. MiniCLEAN collaboration, *Update on the MiniCLEAN Dark Matter Experiment.*, arXiv:1403.4842 (2015)
21. TEXONO Group, *Measurement of Neutrino-Electron Scattering Cross-Section with a CsI(Tl) Scintillating Crystal Array at the Kuo-Sheng Nuclear Power Reactor.*, Physical Review D, Vol. 81, 072001 (2010)
22. TEXONO Group, *New Limits on Spin-Independent Couplings of Low-Mass WIMP Dark Matter with a Germanium Detector at a Threshold of 200 eV.*, Physical Review D, Vol. 79, 061101, (2009)

PRESENTATIONS

- **Conference**

- *First Results from the LUX-ZEPLIN dark matter experiment*, ICRC 2023, Nagoya, Japan.
- *Water Based Liquid Scintillator R&D - BNL 30T demonstrator*, APS April meeting, 2023, Minneapolis.
- *Transparent Thermoplastic Acrylic Scintillator*, CPAD instrumentation Frontier workshop, Stony Brook, Invited Talk.
- *Status of the LZ dark matter search and projected sensitivity*, PIC 2019, National Taiwan University.
- *Triplet lifetime measurement using MiniCLEAN detector*, UCLA Dark Matter 2018 (Feb. 2018), Talk.
- *The MiniCLEAN Experiment*, TAUP 2017 (July 2017), Poster.
- *The MiniCLEAN experiment – Recent progress*, APS April Meeting (January 2017), Talk.
- *The MiniCLEAN experiment*, APS Four Corner Meeting (October 2016), Talk.
- *In-situ Optical Calibration System for MiniCLEAN*, CAP Annual Meeting (June 2014), Poster.

– *In-situ Optical Calibration for MiniCLEAN*, APS April Meeting (April 2012), Talk.

• **Invited Colloquium and Seminar Talks**

- *Hunting for the Invisible Deep Underground*, Frontier in Science, University of Alabama at Huntsville (Sep 2023).
- *First Results from LUX-ZEPLIN dark matter experiment*, SNOLAB HEP seminar, SNOLab (Dec. 2022).
- *Hunting for the Invisible Deep Underground*, HEP seminar, Institute of Physics, Academia Sinica (Jan 2022).
- *Hunting for the Invisible Deep Underground*, Colloquium, University of Alabama (April 2021), Faculty job talk.
- *Status of the LZ dark matter search and projected sensitivity*, LPPC Seminar, Harvard University (Mar. 2019), Invited Talk.
- *Looking for dark monster in deep underground*, Colloquium, Department of Physics NCHU (Sep. 2018), Invited Talk.
- *Liquid noble gas for direct dark matter detection*, LeCosPA Cosmology and Particle Astrophysics Seminars, NTU (Sep. 2018), Invited Talk.

AWARDS & HONORS

- **William G. Larsen, PhD Memorial Graduate Award for Best Teaching Assistant** *May, 2017*
- **Doctoral Conference Presentation Award** *February, 2017*
- **Student Travel Awards for 2017 APS April Meeting** *January, 2017*
- **Dean's dissertation scholarship** *June, 2016*
- **Graduate Scholarship Fund** *May, 2016*