

Haoran Li

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Education

University of Wisconsin, Madison

Major: B.S. Physics and B.S. Computer Science

Cumulative GPA: 3.96/4.00

Sept. 2017 – May. 2021

Madison, WI

University of California, Santa Barbara

Major: Ph.D. Physics

Sept. 2021 – Present

Santa Barbara, CA

Research Experiences

Graduate Student Researcher

University of California, Santa Barbara | Department of Physics

Worked in Andrew Jayich's Lab on performing spectroscopy on radium ion, and building experiment for quantum logic spectroscopy on radium based molecular ion.

Sept. 2021 – Present

Undergraduate Student Researcher

University of Wisconsin, Madison | Department of Physics

Worked in Shimon Kolkowitz's Lab on building a multiplexed strontium optical lattice clock.

July 2019 – May 2021

Undergraduate Student Researcher

University of Wisconsin, Madison | Department of Physical Engineering

Undergraduate Research Scholar Program

Designed and built vacuum chamber for toroidal helicon plasma experiment.

Sept. 2018 – May 2019

Publications

Lifetimes of the Metastable $6d^2D_{5/2}$ and $6d^2D_{3/2}$ States of Ra^+

Haoran Li, Huaxu Dan, Mingyu Fan, Spencer Kofford, Robert Kwapisz, Roy A Ready, Akshay Sawhney, Merrell Brzeczek, Craig Holliman, Andrew M Jayich, SG Porsev, MS Safronova

[PRL, 135, 7 \(2025\)](#)

Laser cooling of radium-225 ions

Roy Ready, Haoran Li, Spencer Kofford, Robert Kwapisz, Huaxu Dan, Akshay Sawhney, Mingyu Fan, Craig Holliman, Xiaoyang Shi, Luka Sever-Walter, AN Gaiser, JR Griswold, A. M. Jayich

[arXiv:2407.14721 \(2024\)](#)

Spectroscopy of electric dipole and quadrupole transitions in $^{224}Ra^+$

Spencer Kofford, Haoran Li, Robert Kwapisz, Roy A Ready, Akshay Sawhney, Oi Chee Cheung, Mingyu Fan, Andrew M Jayich

[PRA, 111, 3 \(2025\)](#)

Laser cooling and trapping of $^{224}Ra^+$

M. Fan, Roy A. Ready, H. Li, S. Kofford, R. Kwapisz, C. A. Holliman, M. S. Ladabaum, A. N. Gaiser, J. R. Griswold, A. M. Jayich

[PRR, 5, 4 \(2023\)](#)

Differential clock comparisons with a multiplexed optical lattice clock

X. Zheng, J. Dolde, V. Lochab, B. Merriman N., H. Li, S. Kolkowitz

[Nature, 602, 7897 \(2022\)](#)

Talks and Posters

Lifetimes of the Metastable $6d\ ^2D_{5/2}$ and $6d\ ^2D_{3/2}$ States of Ra^+

Contributed talk, APS DAMOP, Portland, Oregon, June 2025

Probing BSM physics using radium-bearing molecular ions

Poster, NACTI, UCLA, Los Angeles, CA, August 2024

Radium-based molecular ions for probing physics beyond the standard model

Invited talk, EQuAL, UCSB, Santa Barbara, CA, October 2024

Multiplexed strontium optical clock

Contributed talk, FioLS, September 2020