

Daniel Ang

PHD STUDENT IN PHYSICS · HARVARD UNIVERSITY

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Education

Harvard University

PHD, PHYSICS

- Member, ACME collaboration
- Dissertation committee: Gerald Gabrielse (main advisor), Roxanne Guenette, Ronald Walsworth

Cambridge, MA

2015 - present

Harvard University

MA, PHYSICS

Cambridge, MA

2015 - 2017

Amherst College

BA WITH HONORS, MATHEMATICS, MUSIC, PHYSICS

- Summa cum laude with Distinction
- Senior thesis in physics: *In Search of New Geometries for Probing Spin-Spin Interactions* (advisor: Larry Hunter)
- Senior thesis in music: *In Pursuit of Feeling* (advisor: Eric Sawyer)

Amherst, MA

2011 - 2015

Professional Experience

2018- present **Visiting Pre-Doctoral Fellow in Physics**, Gabrielse Lab, Center for Fundamental Physics, Northwestern University

2020 **Teaching Fellow, Applied Physics 50A**, Department of Physics, Harvard University

2015- present **Graduate Research Assistant**, Gabrielse Lab & ACME collaboration, Department of Physics, Harvard University

2013 **Visiting Undergraduate Fellow in Physics**, ACME Collaboration, Harvard University

2012-15 **Research Assistant**, Hunter Lab, Amherst College

Publications

X. Wu, P. Hu, Z. Han, **D.G. Ang**, C. Meisenhelder, G. Gabrielse, J.M. Doyle, D. DeMille, “Electrostatic focusing of cold and heavy molecules for the ACME electron EDM search”, arxiv.org/abs/2204.05906.

D.G. Ang, C. Meisenhelder, C. Panda, X. Wu, D. DeMille, J. Doyle, G. Gabrielse, “Measurement of the $H^3\Delta_1$ Radiative Lifetime in ThO”, arxiv.org/abs/2204.05904.

T. Masuda, **D.G. Ang**, N. R. Hutzler, C. Meisenhelder, N. Sasao, S. Uetake, X. Wu, D. DeMille, G. Gabrielse, J.M. Doyle, K. Yoshimura, “Suppression of the optical crosstalk in a multi-channel silicon photomultiplier array”, *Optics Express* **29**(11), 16914-16926 (2021).

X. Wu, Z. Han, J. Chow, **D.G. Ang**, C. Meisenhelder, C.D. Panda, E. West, G. Gabrielse, J.M. Doyle, D. DeMille, “The metastable $Q^3\Delta_2$ state of ThO: A new resource for the ACME electron EDM search”, *New Journal of Physics* **22**, 023013 (2020).

C.D. Panda, C. Meisenhelder, M. Verma, **D.G. Ang**, J. Chow, Z. Lasner, X. Wu, D. DeMille, J.M. Doyle, G. Gabrielse, “Attaining the shot-noise-limit in the ACME measurement of the electron electric dipole moment”, *Journal of Physics B* **52**, 235003 (2019).

The ACME Collaboration: V. Andreev, **D.G. Ang**, D. DeMille, J.M. Doyle, J. Haefner, N.R. Hutzler, Z. Lasner, C. Meisenhelder, B.R. O’Leary, C.D. Panda, A.D. West, E.P. West, X. Wu, “Improved limit on the electric dipole moment of the electron,” *Nature* **562**, 355-360 (2018)

S.K. Peck, N. Lane, **D.G. Ang** and L.R. Hunter, “Using Tensor Light Shifts to Measure and Cancel a Cell’s Quadrupolar Frequency Shift,” *Physical Review A* **93**, 023426 (2016).

- L.R. Hunter, **D.G. Ang**, “Using Geoelectrons to Search for Velocity-Dependent Spin-Spin Interactions,” *Physical Review Letters* **112**, 091803 (2014).
- L.R. Hunter, J. Gordon, S. Peck, **D. Ang** and J.-F. Lin, “Using the Earth as a polarized electron source to search for long-range spin-spin interactions,” *Science* **339**, 928 (2013).

Presentations

- “A New Lifetime Measurement of the $H^3 \Delta_1$ state of Thorium Monoxide for the ACME electron EDM experiment”
52nd Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (Virtual), June 2, 2021 (oral presentation)
- “New H-state lifetime measurement for the ACME electron EDM search”
51st Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (Virtual), June 3, 2020 (oral presentation)
- “Beyond the ACME II Limit on the Electron EDM”
Gordon Research Conference (Atomic Physics) on Cold Controlled Atoms and Molecules, Ultrafast Spectroscopy and Precision Measurements, Newport, RI, June 9-14, 2019 (poster)
- “Characterization and Suppression of Systematic Errors in the ACME II Measurement of the Electron Electric Dipole Moment”
49th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics APS Meeting, Ft. Lauderdale, FL, May 28 - June 1, 2018 (poster)
- “Progress Towards an Order of Magnitude Improvement on the Measurement of the Electron Electric Dipole Moment”
48th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, Sacramento, CA, June 5-9, 2017 (poster)

Awards & Fellowships

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| 2019-22 | Harvey Fellowship , Mustard Seed Foundation | \$ 48,000 |
| 2015-18 | Rufus B. Kellogg Amherst Graduate Fellowship , Amherst College | \$ 90,000 |
| 2015 | Joint Quantum Institute Graduate Fellowship (declined) , University of Maryland
Stifler Prize in physics , Amherst College
Sundquist Prize in music composition and performance , Amherst College
Elected to Phi Beta Kappa , Amherst College
Elected to Sigma Xi , Amherst College | |
| 2014 | Winner, Third Degree (National category) and Honorary Mention (International category) , Golden Key Festival Piano Composition Competition, Vienna, Austria
Finalist , ASCAP Morton Gould Young Composers' Awards | |
| 2012 | Schupf Scholarship , Amherst College
Bassett Prize in physics , Amherst College | \$ 25,000 |
| 2011-15 | International Student Scholarship , Amherst College | |
| 2007-10 | School-Based Scholarship, Anglo-Chinese School (Independent) , Ministry of Education, Singapore | |

Teaching Experience

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| Fall 2020 | Physics as a Foundation for Science and Engineering, Part I , Teaching Fellow (under Eric Mazur) | <i>Harvard University</i> |
| Fall 2012 | Introductory Physics I: Mechanics , Grader | <i>Amherst College</i> |
| Spring 2012 | Introductory Physics I: Mechanics , Teaching Assistant & Grader | <i>Amherst College</i> |

Mentoring

- 2018-2019 **Piroz Bahar**, Undergraduate research assistant, Harvard University
- 2018 **Elizabeth Choi**, High school research assistant, Harvard University
- 2017 **Paules Zakhary**, Undergraduate research assistant, Harvard University
- 2017 **Siyuan Liu**, Undergraduate research assistant, Harvard University

Extracurricular Activities

- 2016-18 **Dudley World Music Ensemble, Dudley House**, Music Director & Dudley Fellow *Harvard University*
- 2018-19 **Philosophy of Science Discussion Group**, Organizer *Harvard University*
- 2011-15 **Amherst College Symphony Orchestra**, Principal Cellist *Amherst College*