Stanford



Thomas Shutt

Professor of Particle Physics and Astrophysics

Bio

ACADEMIC APPOINTMENTS

- Professor, Particle Physics and Astrophysics

Teaching

COURSES

2026-27

- Mechanics: PHYSICS 41 (Win)

STANFORD ADVISEES

Orals Evaluator

Zach Hulcher

Doctoral Dissertation Advisor (AC)

Zhixuan (Abi) Li, Liam Sherman, Bahrudin Trbalic, Qihua Wang

Doctoral Dissertation Co-Advisor (AC)

Ruben Coronel

Publications

PUBLICATIONS

- **First Dark Matter Search Results from the LUX-ZEPLIN (LZ) Experiment.** *Physical review letters*
  Aalbers, J., Akerib, D. S., Akerlof, C. W., Al Musalhi, A. K., Alder, F., Alqahtani, A., Alsum, S. K., Amarasinghe, C. S., Ames, A., Anderson, T. J., Angelides, N., Araújo, H. M., Armstrong, et al
  2023; 131 (4): 041002

- **All-sky Medium Energy Gamma-ray Observatory eXplorer mission concept** *JOURNAL OF ASTRONOMICAL TELESCOPES INSTRUMENTS AND SYSTEMS*
  Caputo, R., Ajello, M., Kierans, C. A., Perkins, J. S., Racusin, J. L., Baldini, L., Baring, M. G., Bissaldi, E., Burns, E., Cannady, N., Charles, E., da Silva, R., Fang, et al
  2022; 8 (4)

- **A Simple Ventilator Designed To Be Used in Shortage Crises: Construction and Verification Testing.** *JMIR biomedical engineering*
  Akerib, D. S., Ames, A., Breidenbach, M., Bressack, M., Breur, P. A., Charles, E., Gaba, D. M., Herbst, R., Ignarra, C. M., Luitz, S., Miller, E. H., Mong, B., Shutt, et al
  2021; 6 (3): e26047

- **Signal yields, energy resolution, and recombination fluctuations in liquid xenon** *PHYSICAL REVIEW D*
  Akerib, D. S., Alsum, S., Araujo, H. M., Bai, X., Bailey, A. J., Balajthy, J., Beltrame, P., Bernard, E. P., Bernstein, A., Biesiadzinski, T. P., Boulton, E. M., Bramante, R., BRAS, et al
  2017; 95 (1)

- **Results from a Search for Dark Matter in the Complete LUX Exposure** *PHYSICAL REVIEW LETTERS*
  Akerib, D. S., Alsum, S., Araujo, H. M., Bai, X., Bailey, A. J., Balajthy, J., Beltrame, P., Bernard, E. P., Bernstein, A., Biesiadzinski, T. P., Boulton, E. M., Bramante, R., BRAS, et al
  2017; 118 (2)

- **REVIEW OF PARTICLE PHYSICS Particle Data Group** *CHINESE PHYSICS C*
  Patrignani, C., Agashe, K., Aielli, G., Amsler, C., Antonelli, M., Asner, D. M., Baer, H., Banerjee, S., Barnett, R. M., Basaglia, T., Bauer, C. W., Beatty, J. J., Belousov, et al
  2016; 40 (10)

- **FPGA-based trigger system for the LUX dark matter experiment** *NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT*
  Akerib, D. S., Araujo, H. M., Bai, X., Bailey, A. J., Balajthy, J., Beltrame, P., Bernard, E. P., Bernstein, A., Biesiadzinski, T. P., Boulton, E. M., Bradley, A., Bramante, R., Cahn, et al
  2016; 818: 57-67

- **Tritium calibration of the LUX dark matter experiment** *PHYSICAL REVIEW D*
  Akerib, D. S., Araujo, H. M., Bai, X., Bailey, A. J., Balajthy, J., Beltrame, P., Bernard, E. P., Bernstein, A., Biesiadzinski, T. P., Boulton, E. M., Bradley, A., Bramante, R., Cahn, et al
  2016; 93 (7)

- **Improved Limits on Scattering of Weakly Interacting Massive Particles from Reanalysis of 2013 LUX Data** *PHYSICAL REVIEW LETTERS*
  Akerib, D. S., Araujo, H. M., Bai, X., Bailey, A. J., Balajthy, J., Beltrame, P., Bernard, E. P., Bernstein, A., Biesiadzinski, T. P., Boulton, E. M., Bradley, A., Bramante, R., Cahn, et al
  2016; 116 (16)

- **Results on the Spin-Dependent Scattering of Weakly Interacting Massive Particles on Nucleons from the Run 3 Data of the LUX Experiment** *PHYSICAL REVIEW LETTERS*
  Akerib, D. S., Araujo, H. M., Bai, X., Bailey, A. J., Balajthy, J., Beltrame, P., Bernard, E. P., Bernstein, A., Biesiadzinski, T. P., Boulton, E. M., Bradley, A., Bramante, R., Cahn, et al
  2016; 116 (16)

- **Low-threshold analysis of CDMS shallow-site data** *PHYSICAL REVIEW D*
  Akerib, D. S., Attisha, M. J., Baudis, L., Bauer, D. A., Bolozdynya, A. I., Brink, P. L., Bunker, R., Cabrera, B., Caldwell, D. O., Chang, C. L., Clarke, R. M., Cooley, J., Crisler, et al
  2010; 82 (12)

- **Design and performance of a modular low-radioactivity readout system for cryogenic detectors in the CDMS experiment** *NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT*
  Akerib, D. S., Barnes, P. D., Brink, P. L., Cabrera, B., Clarke, R. M., Gaitskell, R. J., Golwala, S. R., Huber, M. E., Kurylowicz, M., Mandic, V., Martinis, J. M., Meunier, P., Mirabolfathi, et al
  2008; 591 (3): 476-489

- **Installation and commissioning of the CDMSII experiment at Soudan** *10th International Workshop on Low Temperature Detectors*
  Akerib, D. S., Alvaro-Dean, J., Armel, M. S., Attisha, M., Baudis, L., Bauer, D. A., Bolozdynya, A. I., Brink, P. L., Bunker, R., Cabrera, B., Caldwell, D. O., Castle, J. P., Chang, et al
  ELSEVIER SCIENCE BV.2004: 116–19

- **New results from the Cryogenic Dark Matter Search experiment** *PHYSICAL REVIEW D*
  Akerib, D. S., Alvaro-Dean, J., Armel, M. S., Attisha, M. J., Baudis, L., Bauer, D. A., Bolozdynya, A. I., Brink, P. L., Bunker, R., Cabrera, B., Caldwell, D. O., Castle, J. P., Chang, et al
  2003; 68 (8)

- **Results from the 1998-1999 Runs of the Cryogenic Dark Matter Search** *5th International UCLA Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe*

Schnee, R. W., Abrams, D., Akerib, D. S., Armel-Funkhouser, M. S., Baudis, L., Bauer, D. A., Bolozdynya, A., Brink, P. L., Bunker, R., Cabrera, B., Caldwell, D. O., Castle, J. P., Chang, et al

ELSEVIER SCIENCE BV.2003: 185–188

- **Present status of the cryogenic dark matter search (CDMS II) experiment** *23rd International Conference on Low Temperature Physics (LT23)*

  Abrams, D., Akerib, D. S., Armel-Funkhouser, M. S., Baudis, L., Bauer, D. A., Brink, P. L., Bunker, R., Cabrera, B., Caldwell, D. O., Castle, J. P., Chang, C. L., Crisler, M. B., Dixon, et al

  ELSEVIER SCIENCE BV.2003: 1590–1591

- **Exclusion limits on the WIMP-nucleon cross section from the cryogenic dark matter search** *PHYSICAL REVIEW D*

  Abrams, D., Akerib, D. S., Armel-Funkhouser, M. S., Baudis, L., Bauer, D. A., Bolozdynya, A., Brink, P. L., Bunker, R., Cabrera, B., Caldwell, D. O., Castle, J. P., Chang, C. L., Clarke, et al

  2002; 66 (12)

- **Present results and future goals of the Cryogenic Dark Matter Search** *9th International Workshop on Low Temperature Detectors*

  Perera, T. A., Abrams, D., Akerib, D. S., Bauer, D. A., Bolozdynya, A., Brink, P. L., Bunker, R., Cabrera, B., Caldwell, D. O., Castle, J. P., Chang, C., Clarke, R. M., Crisler, et al

  AMER INST PHYSICS.2002: 485–488

- **Status of CDMS search for dark matter WIMPs** *20th Texas Symposium on Relativistic Astrophysics*

  Cabrera, B., Abusaidi, R., Akerib, D. S., Barnes, P. D., Bauer, D. A., Bolozdynya, A., Brink, P. L., Bunker, R., Caldwell, D. O., Castle, J. P., Chang, C., Clarke, R. M., Colling, et al

  AMER INST PHYSICS.2001: 107–118

- **Exclusion limits on the WIMP-nucleon cross section from the Cryogenic Dark Matter Search** *PHYSICAL REVIEW LETTERS*

  Abusaidi, R., Akerib, D. S., Barnes, P. D., Bauer, D. A., Bolozdynya, A., Brink, P. L., Bunker, R., Cabrera, B., Caldwell, D. O., Castle, J. P., Clarke, R. M., Colling, P., Crisler, et al

  2000; 84 (25): 5699-5703

- **Exclusion limits on the WIMP-nucleon scattering cross-section from the Cryogenic Dark Matter Search** *8th International Workshop on Low-Temperature Detectors (LTD-8)*

  Golwala, S. R., Abusaidi, R., Akerib, D. S., Barnes, P. D., Bauer, D. A., Bolozdynya, A., Brink, P., Cabrera, B., Caldwell, D. O., Castle, J. P., Clarke, R. M., Colling, P., Crisler, et al

  ELSEVIER SCIENCE BV.2000: 345–49

- **Preliminary limits on the WIMP-nucleon cross section from the Cryogenic Dark Matter Search (CDMS)** *5th International Workshop on Topics in Astroparticle and Underground Physics (TAUP 97)*

  Akerib, D. S., Barnes, P. D., Bauer, D. A., Brink, P. L., Cabrera, B., Caldwell, D. O., Clarke, R. M., Da Silva, A., Davies, A. K., Dougherty, B. L., Irwin, K. D., Gaitskell, R. J., Golwala, et al

  ELSEVIER SCIENCE BV.1999: 64–68

- **Results and status of the Cryogenic Dark Matter Search (CDMS)** *Workshop on Primordial Black Holes and Hawking Radiation/3rd International Symposium on Sources and Detection of Dark Matter in the Universe*

  Schnee, R. W., Akerib, D. S., Barnes, P. D., Bauer, D. A., Brink, P. L., Cabrera, B., Caldwell, D. O., Clarke, R. M., Colling, P., Crisler, M. B., Dasilva, A., Davies, A. K., Dougherty, et al

  ELSEVIER SCIENCE BV.1998: 283–90

- **Progress of the cryogenic dark matter search (CDMS) experiment.** *2nd Symposium on Dark Matter in the Universe*

  Shutt, T., Akerib, D. S., Barnes, P. D., Bauer, D., Brink, P., Cabrera, B., Caldwell, D. O., CHUGG, B., Clarke, R. M., Dasilva, A., DAVIES, A., Dougherty, B. L., Emes, et al

  ELSEVIER SCIENCE BV.1996: 318–322

- **Installation of the Cryogenic Dark Matter Search (CDMS)** *6th International Workshop on Low Temperature Detectors (LTD6)*

  Barnes, P. D., Dasilva, A., Akerib, D. S., Bauer, D., Brink, P., Cabrera, B., Caldwell, D. O., CHUGG, B., Clarke, R. M., Cummings, A., DAVIES, A., Diaz, R. C., Dougherty, et al

  ELSEVIER SCIENCE BV.1996: 233–36

- **THE 1ST CRYOGENIC DARK-MATTER EXPERIMENT** *5TH INTERNATIONAL WORKSHOP ON LOW TEMPERATURE DETECTORS (LTD-5)*

  Barnes, P. D., Dasilva, A., Aubourg, E., Akerib, D. S., Bauer, D., Borden, D., Cabrera, B., Caldwell, D. O., CHUGG, B., Cummings, A., Dougherty, B. L., Emes, J., Gray, et al

  SPRINGER/PLENUM PUBLISHERS.1993: 791–96