Erin V. Hansen
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Education

December 2019	Ph.D. Physics Enriched Xenon Observatory (EXO-200, nEXO) *Radon injection for light response calibration of the nEXO detector* Graduate Minor in Undergraduate STEM Education	Drexel University, Philadelphia, PA Advisor: Dr. Michelle Dolinski
June 2013	M.S. Physics Daya Bay Neutrino Oscillations Experiment *Toy Monte Carlo Simulations to Accompany Muon Azimuthal Distribution Survey*	Rensselaer Polytechnic Institute, Troy, NY Advisor: Dr. James Napolitano
June 2012	B.S. Physics, *magna cum laude*	Rensselaer Polytechnic Institute, Troy, NY

Professional Appointments

2020	Postdoctoral Scholar	University of California, Berkeley, Berkeley, CA
2016-2019	Graduate Researcher	Drexel University, Philadelphia, PA
2013-2015	Graduate Researcher	University of California, Los Angeles, Los Angeles, CA
2013-2014	Graduate Teaching Assistant	University of California, Los Angeles, Los Angeles, CA
2012-2013	Graduate Teaching Assistant	Rensselaer Polytechnic Institute, Troy, NY
2011-2012	Undergraduate Laboratory Facilitator	Rensselaer Polytechnic Institute, Troy, NY
2009-2012	Undergraduate Researcher	Rensselaer Polytechnic Institute, Troy, NY

Research Experience

2021 - present

Demonstrator Experiment with Multiplexed Event Topology and Energy Reconstruction (DEMETER)
University of California, Berkeley
Lawrence Berkeley National Laboratory (LBNL)

In collaboration with the Physics Division of Lawrence Berkeley National Laboratory, I am spearheading an effort to demonstrate distinction of one- and two-electron events within ultra-cryogenic macrocalorimeters. This requires development of multiplexed signal readout of arrays of superconducting sensors at the milliKelvin scale with stringent radiopurity requirements, as well as photonic and phononic simulations and event reconstruction. I convene the DEMETER UC Berkeley / LBNL working group.

2020 - present

CUORE with Upgraded Particle IDentification (CUPID) University of California, Berkeley
Gran Sasso National Laboratory (LNGS)

Measurements of Neutron-Induced Gamma Ray Background of ^{100}Mo
To examine the impact of gamma ray background due to neutron scattering of ^{100}Mo, we conducted an experiment at the Tandem van de Graaff Accelerator at Triangle Universities Nuclear Laboratory (TUNL) using a sample of CUPID's enriched $Li_2{}^{100}MoO_4$. I convene the working group of researchers from TUNL, Virginia Tech, MIT, Tennessee Tech, and UC Berkeley, and supervise the students working on analyzing beam data and calculating cross sections from neutrons at 6 MeV energy.

Machine Learning Working Group (Convener)
Machine learning techniques for use in CUORE & CUPID are in their infancy, but I have recently convened a working group across both collaborations in order to investigate their use on CUORE data and CUPID simulations. I contribute two analyses: multi-crystal topologies, including supervised classification and sparse image recognition, and event reconstruction using phonon and photon readout (DEMETER). Other efforts include adaptive noise cancellation, whole-detector studies of baseline and calibration resolution, and classifiers for pile-up rejection.

2020 - present

Cryogenic Underground Observatory for Rare Events (CUORE) University of California, Berkeley
Gran Sasso National Laboratory (LNGS)

Multidimensional approach to the search for decays to excited states in CUORE
I am developing multi-dimensional cuts to search for two neutrino double beta decay ($2\nu\beta\beta$) to excited states spread across multiple crystals with advanced patterns of energy deposition, taking into account scattered gamma events and multi-site topologies which make up a large number of previously rejected events. This search is informed by Monte Carlo simulations with cues from supervised machine learning algorithms.

2016 - 2019 | Enriched Xenon Observatory (EXO-200, nEXO) | Drexel University

Radon injection for light-response calibration in the nEXO detector

My dissertation focused on a proposal to inject dissolved radon into the nEXO xenon recirculation system, which will flush alpha-emitting nuclei into the center of the detector with high-scintillation, low-ionization signals — ideal for calibrating the detector response to light as a function of position ('lightmap').

- I benchmarked EXO-200 fluid flow simulations using a combination of simulated events and data from an end-of-run calibration campaign on EXO-200 using sources of of both ^{220}Rn and ^{222}Rn. From this campaign, I measured the growth and decay of daughter populations and converted them into concentration maps of the center of the detector as a function of time. I compared these maps to SolidWorks fluid flow simulations of EXO-200 to test simulation reliability.

- I developed a novel algorithm in python to combine SolidWorks fluid flow simulations of nEXO with the Geant4-based nEXO Monte Carlo; my algorithm predicts the number of decays in the central detector region as a function of time after radon is injected. In combination with resolution requirements from the nEXO lightmap framework, this will drive design constraints for the full-scale nEXO radon injection calibration campaign.

Liquid xenon switching purity monitor

I contributed to the design and construction of a liquid xenon switching purity monitor; the novel design drifts an electron cloud into a region where the electric field is switched at a kHz frequency to artificially extend the drift length. Simulations performed at Drexel suggest that this method can measure lifetimes at the 10 ms scale required to achieve sufficient energy resolution in nEXO.

- I designed and constructed the circuit box for the high voltage switches and characterized these switches at low voltages, including mitigation of flyback voltages and transients.

- I supervised electrostatic COMSOL simulations for a systematic study of both the high-transparency shielding grids and the high voltage switching region.

- I mounted inner cryostat components and contributed to DAQ programming and software interfacing of the slow control electronics.

2016 - 2017 | Solid xenon bolometers | Drexel University

In an effort to understand microscopic anticorrelation phenomenon in cryogenic liquid xenon detectors, Drexel University is building a cryostat to grow solid xenon bolometers. This technology offers insight into the previously unmeasurable phonon energy channel in liquid xenon.

- I developed and furthered initial construction of a cryostat to epitaxially grow solid xenon bolometers at 4K as a proof-of-concept for a future detector design.

- I supervised the development of a software system to readout and monitor signals from slow-control hardware.

Research Experience (cont.)

2013-2016 | Cryogenic Underground Observatory for Rare Events (CUORE) — University of California, Los Angeles; Gran Sasso National Laboratory (LNGS)

CUORE with Upgraded Particle ID (CUPID): Antireflective coatings for increased light collection

- Using class-1000 clean rooms at UCLA and UC Santa Barbara, I tested a variety of coatings on Ge and Si wafers and characterized them at multiple angles of incidence — a critical distinction from previous literature. I published this work in the Journal of Instrumentation and proposed several options for anti-reflective coatings depending on the final design of the CUPID experiment.

2009-2013 | Daya Bay Neutrino Oscillations Experiment — Rensselaer Polytechnic Institute

Monte Carlo simulations for muon azimuthal distribution survey

- I created a toy Monte Carlo simulation to predict the capabilities of Daya Bay to reconstruct atmospheric muons. This would provide a proof-of-concept for a muon azimuthal distribution survey of the mountains above the Daya Bay detectors. While an azimuthal distribution survey was made difficult by the distribution of photomultiplier tubes (PMTs) in the Daya Bay detector, this model suggested possible upgrades if the survey became a priority in the future.

Awards & Honors

2019 College of Arts and Sciences Outstanding Mentorship Award
Drexel University Graduate College; Drexel Office of Undergraduate Research

2019 Graduate Student Travel Grant
American Physical Society Division of Nuclear Physics

2018 Travel Award for Excellence in Graduate Research
American Physical Society Forum on Graduate Student Affairs

2018 Drexel University International Travel Award
Drexel University Office of International Programs

2013 Nadia Trinkala Service Award
for significant contributions to the community & quality of life at Rensselaer and in City of Troy.

Undergraduate Mentoring

2021-present | **Shreya Puranam (B.S. Physics, UCB, 2024), Anisha Yeddanapudi (B.S. Physics, UCB, 2025)**
CUPID
- Analysis of neutron-induced gamma ray background of ^{100}Mo using data from an experiment at the Tandem accelerator at TUNL. Calculation of cross sections and implications for background studies in CUPID.
- Will present this work at the American Physical Society (APS) Division of Nuclear Physics (DNP) Fall 2022 Conference Experience for Undergraduates (CEU) poster session.

2022-present | **Yoonsang Kim (B.S. Physics, UCB, 2025)**
CUPID, DEMETER
- Simulations of phonons in $Li_2{}^{100}MoO_4$ using Geant4 software for use in the design of the DEMETER detector module. Calculations of sensitivity based on position and energy topology and their dependence on sensor location.

2021-present | **Kaylee Graham (B.S. Physics, UCB, 2024)**
CUPID, DEMETER
- Generalization of photonic simulations in Geant4 software, including the addition of reflecting foils and absorptive sensors. Calculations of sensitivity for DEMETER toward distinction of one- and two-electron events in $Li_2{}^{100}MoO_4$.

2016 - 2019 | **Philip Weigel (B.S. Physics, Drexel, 2020)**
nEXO, liquid xenon purity monitor, solid xenon bolometers
- Slow control monitoring system for the Drexel solid xenon bolometer study.
- Presented this work at the Drexel STAR Scholars Summer Showcase in 2016 with a poster titled "A Control System for Growing a Radiation Detector at Low Temperature", and at the 2019 APS DPF Fall meeting with a talk titled "Development and characterization of noble solid bolometers" (arXiv[physics.ins-det]1910.06276).
- Currently a graduate student at Massachusetts Institute of Technology in the Department of Physics.

2019 | **Nicole Khusid (B.S. Physics, University of Connecticut, 2022)**
EXO-200, nEXO
- Pulse shape analysis from ^{212}Bi^{212}Po coincidence events from the EXO-200 end-of-run Rn-220 calibration campaign.
- Currently a graduate student at University of Connecticut in the Department of Physics.

2018 | **Othon Tzamtzis (B.S. Physics, Drexel, 2022)**
nEXO, liquid xenon purity monitor
- Noise reduction protocols for anode and cathode signals from tests in gaseous xenon.
- Presented this work at the Drexel STAR Scholars Summer Showcase in 2018 with a poster titled "Liquid Xenon Purity Monitor Signal Analysis".

2017 | **Jared Gdanski (B.S. Physics, Drexel, 2020)**
nEXO, liquid xenon purity monitor
- Comprehensive study of the high voltage switching region and shielding grids to ensure uniform electric fields and grid transparencies.
- Presented this work as a poster titled "Electrostatic simulation of a liquid xenon purity monitor" at the Conference Experience for Undergraduates program at the 2017 APS DNP Fall Meeting.
- Currently a graduate student at The Ohio State University Department of Physics.

2014 - 2015 | **Chloe Groome (B.S. Physics, UCLA, 2015)**
CUORE, CUORE-0
- Analysis module to reconstruct CUORE-0 pulses discarded due to saturation (mostly from through-going atmospheric muons).
- Currently a graduate student & NSF GRFP fellow at UC Irvine in the Chemical Engineering and Materials Science Department.

Instructional Coursework and Certification

CIRTL Network - First Year Faculty Teaching Academy Summer 2022

Intensive course designed for future faculty. Students will learn how to create a great learning experience for their classrooms while developing a solid foundation of best teaching practices and strategies.

CIRTL Network - Research Mentor Training Spring 2022

Students will develop their personal mentoring philosophy, learn how to articulate that philosophy across a variety of disciplines, and refine strategies for dealing with mentoring challenges.

Drexel University Graduate Minor in Undergraduate STEM Education December 2019

Drexel CIRTL Associate Certificate 2019

Awarded in association with the Center for the Integration of Research, Teaching, and Learning (CIRTL), Drexel CIRTL Certificates distinguish emerging leaders in evidence-based teaching practices among future faculty.

Drexel GRAD 512 - Advanced Undergraduate STEM Pedagogical Techniques Summer 2019

Students will address approaches to utilizing technology tools to support implementation of active-learning, confront how learning involves more than content and includes metacognition, epistemology, and affective features. Term project: “Slack in the classroom: survey and pilot study”

Drexel GRAD 513 - Improving STEM Education Through Research Spring 2019

This course will teach students how to: search, read and understand the education literature to modify their approach to their teaching; design studies to address STEM education research questions; design effective grant proposals and publications in STEM education.

CIRTL Network - Diversity in the College Classroom Spring 2019

In this course, students develop practical classroom strategies that address “equity,” “inclusion,” “diversity,” and related terms. Students consider research on bias and build a community of inquiry around ways diversity affects both our teaching and student learning.

CIRTL Network - Equity in STEM for all Genders Fall 2018

Students will study how gender bias impacts STEM training and careers. Participants will increase awareness of gender bias through analysis of identity, roles, and contexts where gender bias manifests in STEM university situations.

Drexel GRAD 514 - Quality Assessment Practices Summer 2018

Students will learn and apply best assessment practices in STEM learning environments to: develop their own cognitive and affective assessments aligned with learning objectives; provide students with appropriate formative feedback reflective of STEM learning; suggest modifications to STEM instructional practices based on assessment data.

Drexel GRAD T-580 - Foundations in Evidence-Based STEM Pedagogy Winter 2016

A graduate level introduction to evidence-based approaches to teaching STEM undergraduates. Discussion, research, and practice of a number of evidence-based pedagogical approaches, with an emphasis on understanding why changes to STEM teaching are important for promoting retention and diversity in STEM fields.

Teaching Experience

2014 - 2015 | **Personal Tutor**
- AP Physics B/C (Harvard-Westlake School)
- University-level thermodynamics, fluids, waves, light, and optics
- University-level electricity, magnetism, and modern physics

2013 - 2014 | **Teaching Assistant, University of California, Los Angeles**
- PHYS 6A - Physics for Life Sciences Majors: Mechanics
- PHYS 17 - Introduction to Quantum Mechanics and Statistical Mechanics

2012 - 2013 | **Teaching Assistant, Rensselaer Polytechnic Institute**
- PHYS 2510 - Quantum Physics
- PHYS 4100 - Introduction to Quantum Mechanics

2011 - 2012 | **Laboratory Facilitator, Rensselaer Polytechnic Institute**
- PHYS 1150 - Honors Physics I
- PHYS 1250 - Honors Physics II

Leadership

2021-present **UC Berkeley Physics APS-IDEA Team / DEI Committee**
Member of the APS Inclusion, Diversity, and Equity Alliance (APS-IDEA) team representing UC Berkeley. Responsible for connecting resources between the APS-IDEA community members and the experiences at UC Berkeley. Postdoctoral representative to the Berkeley Physics DEI Committee, responsible for postdoc-related events like town halls and socials, as well as the subcommittee on graduate student recruitment.

2020-present **CUORE Publications Board**
Member of CUORE collaboration Publications Board, responsible for shepherding articles from initial writing through internal and external review to publication.

2017-2019 **Drexel Minorities and Women in Physics Committee**
Co-founder and co-author of proposal (2017) to redesign Drexel physics admission procedures.
Treasurer (2018-2020) - funding proposals, budget maintenance, and organization of event finances

2017-2018 **Drexel Physics Graduate Student Association**
Vice President of Diversity, elected by membership
Organizing and supporting events with diversity focus, like LGBTQ+ Ally training and related colloquia.

Activities & Outreach

2020 **SAGE- S (Science Accelerating Girls' Engagement in STEM) Planning Committee**
Member of Volunteer Sub-Committee: Responsible for developing literature-driven training around bias and cultural awareness to support volunteer's interactions with participants.
Member of Professional Growth Sub-Committee: Responsible for planning and logistics of professional growth workshops including 'harnessing opportunities from success and failure'.

2016-2018 **Philadelphia Science Festival, Science Carnival**
- 2018 — Supervised Drexel physics booth, including organizing space and funding logistics, transporting demonstrations, and organizing volunteers
- 2016, '17, '19 — Volunteered at Drexel physics booth, presenting demonstrations to families of all ages

2017-2018 **Philadelphia Area Girls Enjoying Science™ (PAGES)**
Volunteer, presenting physics demonstrations to sixth-grade girls across the Philadelphia region to increase visibility of women in STEM.

Invited Presentations

2021 Hansen, E.V., "Search for two-neutrino double-beta decay of ^{130}Te to excited states of ^{130}Xe with CUORE"
Institute for Nuclear and Particle Astrophysics (INPA) seminar, Lawrence Berkeley National Laboratory

2020 Hansen, E.V., "Neutrinoless double beta decay and the search for neutrino mass"
2017 Fall Meeting of the American Physical Society's Division of Nuclear Physics, Virtual Conference
http://meetings.aps.org/Meeting/DNP20/Session/KM.1

2019 Hansen, E.V., "Novel techniques for characterizing detector response for the nEXO experiment"
Institute for Nuclear and Particle Astrophysics (INPA) seminar, Lawrence Berkeley National Laboratory

2019 Hansen, E.V., "Novel techniques for characterizing detector response for the nEXO experiment"
High Energy Physics Seminar, University of Indiana, Bloomington

2019 Hansen, E.V., "Novel techniques for characterizing detector response for the nEXO experiment"
Seminar, University of California, Davis

Selected Conference Presentations

2022 Hansen, E.V. (for the CUPID collaboration), "Toward CUPID-1T: a bolometric experiment to explore $0\nu\beta\beta$ in the Normal Ordering region "
2021 Fall Meeting of the American Physical Society's Division of Nuclear Physics
https://meetings.aps.org/Meeting/DNP22/Session/DD.4

2022 Hansen, E.V. (for the CUPID collaboration & DEMETER working group), "CUPID, CUPID-1T, and the DEMETER Demonstrator"
Neutrino 2022: International Conference on Neutrino Physics and Astrophysics

2022 Hansen, E.V. (for the CUPID collaboration & DEMETER working group), "Research and development progress toward DEMETER & CUPID-1T"
2021 April Meeting of the American Physical Society
https://meetings.aps.org/Meeting/APR22/Session/B14.2

2021 Hansen, E.V. (for the CUPID collaboration & DEMETER working group), "Progress toward a multiplexed read-out of transition-edge sensors for CUPID-1T"
2021 Fall Meeting of the American Physical Society's Division of Nuclear Physics, Virtual Conference
https://meetings.aps.org/Meeting/DNP21/Session/PB.5

2021 Hansen, E.V. (for the CUORE collaboration), "Search for two-neutrino double-beta decay of ^{130}Te to excited states of ^{130}Xe with CUORE"
2021 April Meeting of the American Physical Society, Virtual Conference
http://meetings.aps.org/Meeting/APR21/Session/D13.4

2020 Hansen, E.V., "Analysis of dissolved radon calibration sources in EXO-200"
2017 Fall Meeting of the American Physical Society's Division of Nuclear Physics, Virtual Conference
http://meetings.aps.org/Meeting/DNP20/Session/DN.1

2019 Hansen, E.V. (for the nEXO collaboration), "Calibration Techniques for the nEXO Experiment"
2019 April Meeting of the American Physical Society, Denver, CO
http://meetings.aps.org/Meeting/APR19/Session/L10.2

2018 Hansen, E.V. (for the nEXO collaboration), "Status of R&D toward the nEXO detector" (Poster)
XXVIII International Conference on Neutrino Physics and Astrophysics (Neutrino 2018)
Heidelberg, Germany (4-9 June 2018) https://doi.org/10.5281/zenodo.1300582

Selected Publications

1. "Results from EXO-200 end-of-run calibration tests using sources of dissolved Radon-220 and Radon-222" **E. V. Hansen** *et al.* [EXO-200 Collaboration]. *in preparation*
2. "Diversity, Equity, and Inclusion in Particle Physics" **C. Bonifazi** *et al.*. (2022) arXiv preprint arXiv:2209.12377 [physics.ed-ph] *(contribution to Snowmass 2021)*
3. "Optimization of the first CUPID detector module" K. Alfonso *et al.* [CUPID Collaboration].Eur. Phys. J. C **82**, no. 9, 1-9 (2022)
4. "An Energy-dependent Electro-thermal Response Model of CUORE Cryogenic Calorimeter" D.Q. Adams *et al.* [CUORE Collaboration]. (2022) arXiv preprint arXiv:2205.04549 [physics.ins-det]
5. "New direct limit on neutrinoless double beta decay half-life of ^{128}Te with CUORE" D.Q. Adams *et al.* [CUORE Collaboration]. (2022) arXiv preprint arXiv:2205.03132 [nucl-ex]
6. "Transforming US Particle Physics Education" **E.V. Hansen** *et al.*. (2022) arXiv preprint arXiv:2204.08983 [physics.ed-ph] *(contribution to Snowmass 2021)*
7. "Climate of the Field: Snowmass 2021" **E.V. Hansen** *et al.*. (2022) arXiv preprint arXiv:2204.03713 [physics.soc-ph] *(contribution to Snowmass 2021)*
8. "Search for Neutrinoless β^+EC Decay of ^{120}Te with CUORE" D.Q. Adams *et al.* [CUORE Collaboration]. Phys. Rev. C **105**, 065504 (2022)
9. "Search for Majorana neutrinos exploiting millikelvin cryogenics with CUORE" CUORE Collaboration. Nature **604** 53-58 (2022)
10. "Toward CUPID-1T" A. Armatol *et al.* [CUPID Collaboration]. (2022) arXiv preprint arXiv:2203.08386 [nucl-ex] *(contribution to Snowmass 2021)*
11. "The EXO-200 detector, part II: Auxiliary systems" N. Ackerman *et al.* [EXO-200 Collaboration]. JINST **17**, no. 02, P02015 (2022)
12. "CUORE opens the door to tonne-scale cryogenics experiments" D.Q. Adams *et al.* [CUORE Collaboration]. Prog. Part. Nuc. Phys. 103902 (2021)
13. "Novel technique for the study of pileup events in cryogenic bolometers" A. Armatol *et al.* [CUPID Collaboration]. Phys. Rev. C **104**, no. 1, 015501 (2021)
14. "Event Reconstruction in a Liquid Xenon Time Projection Chamber with an Optically-Open Field Cage" T. Stiegler *et al.* [nEXO Collaboration]. Nucl. Instrum. Meth. A **1000** 165239 (2021)
15. "Measurements of electron transport in liquid and gas Xenon using a laser-driven photocathode" O. Njoya *et al.* [nEXO Collaboration]. Nucl. Instrum. Meth. A **972** 163965 (2020)
16. "Measurement of the scintillation and ionization response of liquid xenon at MeV energies in the EXO-200 experiment" G. Anton *et al.* [EXO-200 Collaboration]. Phys. Rev. C **101**, no. 6, 065501 (2020)
17. "Simulation of charge readout with segmented tiles in nEXO" Z. Li *et al.* [nEXO Collaboration]. JINST **14**, no. 9, P09020 (2019)
18. "Search for Neutrinoless Double-Beta Decay with the Complete EXO-200 Dataset" G. Anton *et al.* [nEXO Collaboration]. Phys. Rev. Lett. **123**, no. 16, 161802 (2019)
19. "Imaging individual Ba atoms in solid xenon for barium tagging in nEXO" C. Chambers *et al.* [nEXO Collaboration]. Nature **569** 203–207 (2019)
20. "Double-beta decay of ^{130}Te to the first 0^+ excited state of ^{130}Xe with CUORE-0" C. Alduino *et al.* [CUORE Collaboration].Eur. Phys. J. C **79**, no. 9, 795 (2019)
21. "Study of Silicon Photomultiplier Performance in External Electric Fields" X. L. Sun *et al.* [nEXO Collaboration].JINST **13**, no. 09, T09006 (2018)
22. "nEXO Pre-Conceptual Design Report" S. Al Kharusi *et al.* [nEXO Collaboration]. arXiv:1805.11142 [physics.ins-det]
23. "Deep Neural Networks for Energy and Position Reconstruction in EXO-200" S. Delaquis *et al.* [EXO Collaboration]. JINST **13**, no. 08, P08023 (2018)
24. "First Results from CUORE: A Search for Lepton Number Violation via $0\nu\beta\beta$ Decay of ^{130}Te" C. Alduino *et al.* [CUORE Collaboration]. Phys. Rev. Lett. **120**, no. 13, 132501 (2018)
25. "Search for nucleon decays with EXO-200" J. B. Albert *et al.* [EXO-200 Collaboration].Phys. Rev. D **97**, no. 7, 072007 (2018)
26. "Characterization of an Ionization Readout Tile for nEXO" M. Jewell *et al.* [nEXO Collaboration].JINST **13**, no. 01, P01006 (2018)
27. "Sensitivity and Discovery Potential of nEXO to Neutrinoless Double Beta Decay" J. B. Albert *et al.* [nEXO Collaboration]. Phys. Rev. C **97**, no. 6, 065503 (2018), LLNL-JRNL-737682
28. "Low Energy Analysis Techniques for CUORE" C. Alduino *et al.* [CUORE Collaboration] Eur. Phys. J. C **77**, no. 12, 857 (2017)
29. "Search for Neutrinoless Double-Beta Decay with the Upgraded EXO-200 Detector" J. B. Albert *et al.* [EXO Collaboration].Phys. Rev. Lett. **120**, no. 7, 072701 (2018)
30. "CUORE sensitivity to $0\nu\beta\beta$ decay" C. Alduino *et al.* [CUORE Collaboration].Eur. Phys. J. C **77**, no. 8, 532 (2017)
31. "The projected background for the CUORE experiment" C. Alduino *et al.* [CUORE Collaboration].Eur. Phys. J. C **77**, no. 8, 543 (2017)
32. "Measurement of the two-neutrino double-beta decay half-life of^{130} Te with the CUORE-0 experiment" C. Alduino *et al.* [CUORE Collaboration]. Eur. Phys. J. C **77**, no. 1, 13 (2017)
33. "Characterization of single layer anti-reflective coatings for bolometer-based rare event searches" **E. V. Hansen**, N. DePorzio and L. Winslow.JINST **12**, no. 09, P09018 (2017)
34. "CUORE-0 detector: design, construction and operation" C. Alduino *et al.* [CUORE Collaboration].JINST **11**, no. 07, P07009 (2016)
35. "Search for Neutrinoless Double-Beta Decay of ^{130}Te with CUORE-0" K. Alfonso *et al.* [CUORE Collaboration].Phys. Rev. Lett. **115**, no. 10, 102502 (2015)