

DONGMING MEI  
The University of South Dakota  
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## EDUCATION

### *The University of Alabama*

1999 – 2003 PhD, Particle and Nuclear Physics/Neutrino Physics

### *Huazhong Normal University*

1979 – 1983 BSc, Physics

## POSITIONS HELD

### *The University of South Dakota*

2009 – date Director of Center for Ultra-Low Background Experiments in Dakota

2016 – date Professor

2011 – 2016 Associate Professor

2006 – 2011 Assistant Professor

### *Los Alamos National Laboratory*

2003 – 2006 Postdoc Researcher

### *University of Michigan, Ann Arbor*

1997 – 1999 Visiting Scholar

### *Tibet University*

1996 – 1997 Director, Department of Physics

1993 – 1997 Director, Institute of Cosmic-Ray Research

1992 – 1997 Associate Professor

1983 – 1992 Assistant Professor

*Current research:* (a) Research and development of high-purity germanium detectors for probing physics beyond the standard model by leading an international collaboration – PIRE-GEMADARC funded by US National Science Foundation. **PIRE-GERmanium Materials And Detectors Advancement Research Consortium** (PIRE-GEMADARC) is a global partnership created to accelerate the germanium (Ge) material platform used in research and development for ton-scale DM and  $0\nu\beta\beta$  decay experiments while educating the next generation of scientists. PIRE-GEMADARC leverages the research expertise, training capabilities, and world-renowned facilities of eleven institutions in the United States, Canada, China, Germany, India, and Taiwan. (b) Search for dark matter and Weakly Interacting Massive Particles (WIMPs) in the Large Underground Experiment (LUX) and LUX-Zeplin (LZ) experiment; (c) Probe of the CP violation with long baseline neutrino beam in the DUNE experiment; (d) Development of ultra-low background experiments with high-purity germanium crystal growth in the CUBED governor's research center; development of nuclear instrumentation, semiconductor detectors, electronics and materials for non-accelerator underground experiments.

*Completed projects:* Crystal growth and detector development for underground experiments funded by Department of Energy; Neutrino oscillation and reactor neutrino research in the KamLAND experiment. Achievements of this experiment include the first demonstration of the oscillatory signature of neutrino oscillations in reactor neutrinos, which was recognized in the 2016 Breakthrough Prize in Fundamental Physics. The phase-one dark matter searches with LUX. The best sensitivity for WIMPs in the world was achieved in 2013.

## **HONORS and AWARDS**

### *Honors*

2018: Patent Award, “Method of Growing Germanium Crystals”, Refer to patent 10,125,431, USA Patent Office

2015 Breakthrough Prize in Fundamental Physics (KamLAND)

2014 The USD President award: Research Excellence – Established Faculty

2009 The USD President award: Research Excellence – Early Faculty

### *Awards (A total of \$13.9M as the PI on the projects in 12 years)*

- a) Los Alamos National Laboratory Research Agreement: \$48K for 10 months (2020)
- b) NSF EAGER Award: \$69K for 11 months (2018 – 2019)
- c) South Dakota Board of Regents Innovation Grant: \$116K (2018 -2020)
- d) NSF PIRE award: \$4.35M for five years (2017 – 2022)
- e) Board of Regents, Innovation R&D grant: \$120,400 for two years (2016 – 2018)
- f) NSF ICORP Team: \$50,000 for six months (2016 - 2017)
- g) NSF EPSCOR Workshop: \$99K for 12 months (2014-2015)
- h) NSF regular proposal: \$277K for three years (2008 – 2013)
- i) NSF proposal with AARM Collaboration for advanced tools: \$140K for three years (2012 – 2015)
- j) NSF S4 with AARM Collaboration: \$156K for three years (2009 – 2012)
- k) NSF S4 with LUX Collaboration: \$185K for three years (2009 – 2012)
- l) NASA Space Grant: \$194K for one year (2010)
- m) DOE EPSCoR Implementation: \$2.97M for three years (2010 – 2013)
- n) DOE EPSCoR Implementation Renewal: \$0.97M (2013-2015)
- o) NSF with AARM: \$150K for two years (2012-2014)
- p) LANL Simulation: \$80K (2007 – 2009)
- q) South Dakota Research Seed Grant: \$14K (2007 – 2008)
- r) South Dakota Competitive Grant: \$80K (2008 – 2009)
- s) South Dakota 2010 center grant: \$3.4M (2009 – 2014)
- t) NSF NPURC: \$28.8K (2007 – 2009)
- u) USD Internal Grant: ~\$76K (2006, 2007, 2008)
- v) NSF EPSCoR Workshop grant: \$99,626 (2014-2015)
- w) South Dakota BOR competitive grant: \$250,000 (2013-2015)
- x) South Dakota GOED grant: \$25,000 (2014-2015)
- y) South Dakota RCC outreach grant: \$10,000 (2014)
- z) Tsinghua University Research Agreement: \$65,880 (2013-2015)

## **SYNERGISTIC ACTIVITIES**

- a) Visiting Scholar, University of Michigan, Ann Arbor, Sept., 1997 to July, 1999.
- b) Conducted experimental study on building the secondary monitors for Mini-BooNE detector.
- c) Visiting Scholar, INFN and Dipartimento di Fisica dell'Universita', Napoli, April –August, 1997.
- d) Conducted experimental study on the stability of RPC detectors and the efficiency of the mixture of gas for RPC detectors at high altitudes with pressure below 1 atmosphere.
- e) Visiting Scholar, Institute of Cosmic-Ray Research, University of Tokyo, Japan, October, 1994.
- f) Have been an active member of the following physics community collaborations: Tibet AS  $\gamma$  Collaboration, the ARGO-YBJ Collaboration, the KamLAND Collaboration, the Majorana Collaboration, and the miniCLEAN/DEAP Collaboration, the CUBED Collaboration, the AARM Collaboration, the LUX Collaboration, the LZ Collaboration, the DUNE Collaboration.

## **Professional Activities Since 2006**

- 1) NSF grant proposal reviewer
- 2) Astroparticle Physics Journal reviewer

- 3) Physics Review C/D reviewer
- 4) The European Physical Journal C reviewer
- 5) Nuclear Instrument and Methods in Physics A reviewer
- 6) Created the database for the calculation of  $(\alpha, n)$  neutron rate for low background experiments with over 4000 customers who have used this website (neutron.yield.usd.edu) since 2009.
- 7) Own patent for high-purity germanium crystal growth method

### **Leadership Role Since 2006**

- 1) The director for the governor's research center: Center for Ultra-Low Background Experiments in Dakotas since 2009
- 2) The principal Investigator of the NSF PIRE-GEMADARC International Collaboration
- 3) Chief Editor for IOP Science Journal of Physics: Conference Series, V606
- 4) Organizer for the international workshop on germanium detectors and technology, 2014
- 5) Created the unique research facility in the world for high-purity germanium crystal growth and detector development with over 6000 sq ft laboratory space at the University of South Dakota

### **DISSERTATION/THESIS COMMITTEES SINCE 2006**

- 1) Zachary Parsons, honor thesis committee: Committee Chair
- 2) Keenan Thomas, honor thesis committee: Committee Chair
- 3) Jason Spaans, Master Degree defense committee: Committee Chair
- 4) Sirdhar Budhi, Master Degree defense committee: Committee Member
- 5) Yin Bao, Master Degree defense committee: Committee Member
- 6) Kean Thomas, Master Degree defense committee: Committee Chair
- 7) Brian Woltman, honor thesis committee: Committee Chair
- 8) Patrick Davis, honor thesis committee: Committee Chair
- 9) Xiaoyi Yang, Master Degree defense committee: Committee Chair
- 10) Dana Byram, Master Degree defense committee: Committee Chair
- 11) D'Ann Barker, Master Degree defense committee: Committee Chair
- 12) Chris Chiller, Master Degree defense committee: Committee Chair
- 13) Angela Chiller, Master Degree defense committee: Committee Chair
- 14) Ben Jasinski, Master Degree defense committee: Committee Chair
- 15) Nabin Poudyal, Master Degree defense committee: Committee Chair
- 16) Wenzhao Wei, Master Degree defense committee: Committee Member, Thesis advisor
- 17) Hao Mei, Master Degree defense committee: Committee Member, Thesis advisor
- 18) Amimul Ehsan, Master Degree defense committee: Committee member
- 19) Nazir Houssain, Master Degree defense committee: Committee member
- 20) Anjaneyulu Putta, PhD Degree defense committee: Committee member
- 21) Sem Tamang, PhD Degree defense committee: Committee member
- 22) Justin Paul Kloster, PhD defense committee: Committee member
- 23) Qiang Wei, PhD defense committee: Committee member
- 24) Robert Vaselaar (SDSU), Master defense committee: Committee member
- 25) Lu Wang, Master Degree defense committee: Committee Chair
- 26) Michelle While, Master Degree defense committee: Committee Chair
- 27) Ashok Tiwari, Master Degree defense committee: Committee Chair
- 28) Wenzhao Wei, PhD defense committee: Committee member, Thesis advisor

### **Courses Taught Regularly**

- 1) Introduction to Astronomy, PHYS 185 and 187, 2006-2012
- 2) Introduction to Astronomy Lab: PHYS 185L and 187L, 2006-2015
- 3) Nuclear and Particle Physics: PHYS 433/533, 2009-2014
- 4) Nuclear and Particle Physics: PHYS 781, 2010-2014
- 5) Modern Physics Lab: PHYS 332/334, 2008

- 6) Group Theory: PHYS 779 - present
- 7) Theoretical Mechanics: PHYS 751, 2015
- 8) Statistical Physics: PHYS 743, 2016
- 9) Foundation Physics: PHYS 104, 2015, 2018
- 10) Semiconductor Fundamentals and Applications, PHYS 441/541, 2017
- 11) Thermodynamics and Statistical Mechanics, PHYS 433/533, 2017, 2018
- 12) Independent study Classes: PHYS 391 2006 – present
- 13) Honor thesis classes: PHYS 498 2006 – present
- 14) Graduate Master thesis: PHYS 798, 2006 – present
- 15) Graduate PhD thesis: PHYS 898 – 2013 – present
- 16) Advisor for undergraduate and graduate majors

**GRADUATE STUDENTS SUPERVISED:**

- 1) Jason Spaans, The University of South Dakota
- 2) Keenan Thomas, The University of South Dakota
- 3) Xiaoyi Yang, The University of South Dakota
- 4) Dana Byram, The University of South Dakota
- 5) D'Ann Barker, The University of South Dakota
- 6) Chris Chiller, The University of South Dakota
- 7) Angela Chiller, The University of South Dakota
- 8) Ben Jasinski, The University of South Dakota
- 9) Wenzhao Wei, The University of South Dakota
- 10) Nabin Poudyal, The University of South Dakota
- 11) Hao Mei, The University of South Dakota
- 12) Mingqian Chen, The University of South Dakota
- 13) Michelle While, The University of South Dakota
- 14) Lu Wang, The University of South Dakota
- 15) Rajendra Panth, The University of South Dakota
- 16) Nazir Hossain, The University of South Dakota
- 17) Fanyi Jian, The University of South Dakota
- 18) Iseley Marshalls, The University of South Dakota
- 19) Ashok Tiwari, The University of South Dakota
- 20) Mubark Hayani Musa, The University of South Dakota

**POSTDOC ADVISED:**

- 1) Z.-B. Yin, University of South Dakota
- 2) Chao Zhang, University of South Dakota
- 3) Wenchang Xiang, University of South Dakota
- 4) Oleg Perevozchikov, University of South Dakota
- 5) Gang Yang, University of South Dakota
- 6) Guojian Wang, University of South Dakota
- 7) Mingliang Huang, University of South Dakota
- 8) Wenzhao Wei, University of South Dakota
- 9) Xianghua Meng, University of South Dakota

**UNDERGRADUATES ADVISED AND FUNDED:**

- 1) University of South Dakota: Jason Spaans, Keenan Thomas, Brian Tlach, Brian Woltman, Amber Omken, Patrick Davis, Kirby Myers, Iseley Marshall, Alyssa Day, Doug Daily, Andrea Gillespie, Katie Schlotterback, Dusty Nowotny, Nick Weinandt, Yangyang Li, Hao Mei, Daniel Duncan Andrew Schmitz, Fanyi Jian, Lu Wang, Kyler Kooi, Alex Kirkvold
- 2) Black Hills State University: Kristal Runing Wolf (BHSU), Peter Lemke (BHSU),

- 3) University of Chicago: Alex Larson
- 4) Tsinghua University, China: Linfan Zhang

## SELECTED LIST OF PUBLICATIONS

### FIRST AUTHOR OR CORRESPONDING AUTHOR

1. Reply to “Comment on ‘Observation of annual modulation induced by  $\gamma$  rays from  $(\alpha,\gamma)$  reactions at the Soudan Underground Laboratory’ ”, C. Zhang, D.-M. Mei, A. Tiwari, P. Cushman, Phys. Rev. C 101, 049802 (2020).
2. Characterization of High-Purity Germanium Detectors with Amorphous Germanium Contacts in Cryogenic Liquids, R. Panth, J. Liu, I. Abt, X. Liu, O. Schulz, W.-Z. Wei, H. Mei, D.-M. Mei, G.-J. Wang, Eur. Phys. J. C. p667 (2020), arXiv: 2003.13792.
3. The impact of the charge barrier height on germanium (Ge) detectors with amorphous-Ge contacts for light dark matter searches, W.-Z. Wei, R. Panth, J. Liu, H. Mei, D.-M. Mei, G.-J. Wang, arXiv: 2002.04462. Eur. Phys. J C 80 (2020) 472.
4. Investigation of the electrical conduction mechanisms in p-type amorphous (a-Ge) Used as a-Ge contacts for Ge detectors, S. Bhattarai, R. Panth, W.-Z. Wei, H. Mei, D.-M. Mei, M.-S. Raut, P. Acharya, and G.-J. Wang, arXiv:2002.07707.
5. Characterization of high-purity germanium (Ge) crystals for developing novel Ge detectors, M.-S. Raut, H. Mei, D.-M. Mei, S. Bhattarai, W.-Z. Wei, R. Panth, P. Acharya, G.-J. Wang, arXiv:2002.07706.
6. Atmospheric charged  $k/\pi$  ratio and measurement of muon annual modulation with a 12-liter liquid scintillation detector at Soudan, C. Zhang and D.-M. Mei, EPJC 79 (2019) 825, arXiv: 1904.12730.
7. Impact of charge trapping on the energy resolution of Ge detectors for rare-event physics searches, D.-M. Mei et al, Journal of Physics G: Nuclear and Particle Physics, Vol. 47, (2020)105106, arXiv: 1909.05806.
8. Fabrication and Characterization High-Purity Germanium Detectors with Amorphous Germanium Contacts, X.-H. Meng Meng, G.-J. Wang, M.-D. Wagner, H. Mei, W.-Z. Wei, J. Liu, G. Yang and **D.-M. Mei**, arXiv:1810.05662. Journal of Instrumentation, Volume 14, February 2019, P02019.
9. Investigation of Amorphous Germanium Contact Properties with Planar Detectors Made from Home-Grown Germanium Crystals, W.-Z. Wei, X.-H. Meng, Y.-Y. Li, J. Liu, G.-J. Wang, H. Mei, G. Yang, **D.-M. Mei**, and C. Zhang, arXiv: 1809.04111. Journal of Instrumentation, Volume 13, December 2018, P012026.
10. Dark matter (DM) searches through studying DM-nucleon coupling strength, **D.-M. Mei** and W.-Z. Wei, Physics Letters B 785 (2018) 610-614.
11. Direct detection of MeV-scale dark matter utilizing germanium internal amplification for the charge created by the ionization of impurities, **D.-M. Mei** et al., Eur. Phys. J. C (2018) 78:187.
12. Electrical conductivity of high-purity germanium crystals at low temperature, G. Yang, Kyler Kooi, Guojian Wang, Hao Mei, Yangyang Li, and **Dongming Mei**, Applied Physics A, 124 (2018) 381.
13. Average energy expended per e-h pair for germanium-based dark matter experiments, W.-Z. Wei and **D.-M. Mei**, *Journal of Instrumentation* **12** (2017) P04022. arXiv:1602.08005.
14. A comprehensive study of low-energy response for xenon-based dark matter experiments, L. Wang and **D.-M. Mei**, *Journal of Physics G: Nuclear and Particle Physics* **44** (2017) 055001, arXiv: 1604.01083.
15. The impact of neutral impurity concentration on charge drift mobility in n-type germanium, H. Mei, G.-W. Wang, G. Yang, **D.-M. Mei**, *Journal of Instrumentation* **12** (2017) P07003, arXiv : 1705.09562.
16. Observation of annual modulation induced by  $\gamma$  rays from  $(\alpha,\gamma)$  reactions at the Soudan Underground Laboratory, A. Tiwari, C. Zhang, **D.-M. Mei** and P. Cushman, *Physics Review C* **96** (2017) 044609, arXiv:1706.00100.
17. Cosmogenic activation of germanium used for tonne-scale rare event search experiments, W.-Z. Wei, **D.-M. Mei**, C. Zhang, arXiv: 1706.05324; *Astroparticle Physics*, **96** (2017) 24-31.
18. Discrimination of nuclear and electronic recoil events using plasma effect in germanium detectors, W.-Z. Wei, J. Liu, and **D.-M. Mei**, arXiv:1605.05244. JINST **11** (2016) no.07, P-07008.
19. Cosmogenic activation of materials used in rare event search experiments, C. Zhang, **D.-M. Mei**, V. A. Kudryavtsev, S. Fiorucci, arXiv:1603.00098, *AstroParticle Physics* **84** (2016) 62-69.
20. Impact of nuclear impurity concentration on charge drift mobility in germanium, H. Mei, **D.-M. Mei**, G.-J. Wang, G. Yang, arXiv: 1607.03032. JINST **11** (2016) no.12, P12021.

21. Measuring Muon-Induced Neutrons with Large Liquid Scintillation Detector at Soudan Mine , C. Zhang, **D.-M. Mei**, arXiv: 1407.3246. Phys. Rev D 90 (2014) 122003.
22. Ionization Efficiency Study for Low Energy Nuclear Recoils in Germanium, D. Barker, W.-Z. Wei, **D.-M. Mei**, and C. Zhang, Astroparticle Physics. 48 (2013) 8-15.
23. Measuring Fast Neutrons using Large Liquid Scintillation Detector for Ultra-Low Background Experiments, C. Zhang, **D.-M. Mei**, P. Davis, B. Woltman, F. Gray, Nucl. Instr. And Meth. A, 729 (2013) 138-146.
24. Germanium Detector Response to Nuclear Recoils in Search for Dark Matter, D. Barker, **D.-M. Mei**, arXiv: 1203.4620. Astropart. Phys. 38 (2012) 1-6.
25. Muon-Induced Background Study for an Argon-Based Long Baseline Neutrino Experiment, D. Barker, **D.-M. Mei**, Chao Zhang, arXiv: 1202.5000. Phys. Rev. D 86, 054001 (2012).
26. Early Results on Radioactive Background Characterization for Sanford Laboratory and DUSEL Experiments, **D.-M. Mei** et al., arXiv: 0912.0211, Astroparticle physics 34 (2010) 33-39.
27. Predication of Underground Argon Content for Dark Matter Experiments, D.-M. Mei et al., arXiv:0912.5368, PRC 81 (2010) 055802.
28. Measuring Double-Electron Capture with Liquid Xenon Experiments, **D.-M. Mei** et al., Phys. Rev. C 89 (2014) 014608.
29. Depth-sensitivity relation (DSR) for underground laboratories, **D.-M. Mei**, S. Elliott, V. Gehman, A.Hime and K.Kazkaz, Proceedings of PANIC05, Santa Fe, Oct. 2005. <http://www.panic05.lanl.gov/proceedings>.
30. Evaluation of ( $\alpha$ ,n) Induced Neutrons as a Background for Dark Matter Experiments, **D.-M. Mei**, C. Zhang, A. Hime, ArXiv: 0812.4307, 12/22/2008, Nucl. Instr. And Meth. A 606 (2009) 651- 660.
31. Cosmogenic Production as a background in searching for rare physics processes, **D.-M. Mei**, Z.-B. Yin, S. R. Elliott, arXiv: 0903.2272, Astropart. Phys. 31 (2009) 417-420.
32. A Model of Nuclear Recoil Scintillation Efficiency in Noble Liquids, **D.-M. Mei**, Z.-B. Yin, L. C. Stonehill, and A. Hime, ArXiv: 0712.2470, Astroparticle Physics, 30 (2008) 12-17.
33. Muon-Induced Background Study for Underground Laboratories, **D.-M. Mei** and A. Hime, PRD. V.73, 053004 (2006), astro-ph/0512125 (2005).
34. Probing the Underground Science beyond the Standard Model with Ultra-Low Background Experiments at Sanford Lab/DUSEL Nuclear Physics A, Volume 834, Issues 1-4, 1 March 2010, Pages 809c-812c **D.-M. Mei**.

### **Collaborative Papers**

1. Search for two neutrino double electron capture of  $^{124}\text{Xe}$  and  $^{126}\text{Xe}$  in the full exposure of the LUX detector, D. S. Akerib et al., (LUX Collaboration), Journal of Physics G: Nuclear and Particle Physics, Vol. 47, (2020) 105105.
2. Improved modeling of beta electronic recoils in liquid xenon using LUX calibration data, D. S. Akerib et al., (LUX Collaboration), JINST, V 15, February 2020.
3. Extending light WIMP searches to single scintillation photons in LUX, D. S. Akerib et al., (LUX Collaboration), Phys. Rev. D 101, 042001 (2020).
4. First direct detection constraint on mirror dark matter kinetic mixing using LUX 2013 data, D. S. Akerib et al., (LUX Collaboration), Phys. Rev. D 101, 012003 (2020).
5. Results of a Search for sub-GeV Dark Matter Using 2013 LUX data, D. S. Akerib et al., (LUX Collaboration), Phys. Rev. Letters, 122 (2019) 131301.
6. Improved measurements of the beta-decay response of liquid xenon with the LUX detector, D. S. Akerib et al. (LUX Collaboration), Phys. Rev. D 100, 022002 (2019).
7. The electrical properties and distribution of indium in germanium crystals, Guojian Wang, Hao Mei, Xianghua Meng, **Dongming Mei**, Gang Yang, Materials Science in Semiconductor Processing, 2018, 74, 342-346.
8. Search for Neutrinoless Double- $\beta$  decay in  $^{76}\text{Ge}$  with the Majorana Demonstrator, C. E. Aalseth et al. (Majorana Collaboration), Phys. Rev. Lett. 120, 132502 (2018).
9. Calibration, event reconstruction, data analysis, and limit calculation for the LUX dark matter experiment, D. S. Akerib et al. (LUX Collaboration), Phys. Rev. D 97, 102008 (2018).
10. Liquid scintillation measurements and pulse discrimination in the LUX dark matter detector, D. S. Akerib et al. (LUX Collaboration), Phys. Rev. D 97, 112002 (2018).
11. Electrical conductivity of high-purity germanium crystals at low temperature, G. Yang, Kyler Kooi,

- Guojian Wang, Hao Mei, Yangyang Li, and **Dongming Mei**, Applied Physics A, 124 (2018)381.
12. Results from a search for dark matter in the complete LUX, D. S. Akerib et al. (LUX Collaboration), Phys. Rev. Lett. 118, (2017) 021303.
  13. Black Hills State University Underground Campus, B. Mount et al. (BHUC collaboration), Applied Radiation and Isotopes 126 (2017) 130-133.
  14. Results on the spin dependent scattering of weakly interacting massive particles on nucleons from the Run-3 data of the LUX experiment, D. S. Akerib et al., Phys. Rev. Lett. 116 (2016) 161302.
  15. Improved Limits on Scattering of Weakly Interacting Massive Particles from Reanalysis of 2013 LUX data, D. S. Akerib et al. (LUX Collaboration), Phys. Rev. Lett. 116, 161301 (2016).
  16. Tritium calibration of the LUX dark matter experiment, D. S. Akerib et al. (LUX Collaboration), Phys. Rev. D 93, 072009 (2016).
  17. FPGA-based trigger system for the LUX dark matter experiment, D. S. Akerib et al. (LUX Collaboration), Nucl. Instr. Meth. A818 (2016) 57-67.
  18. High-purity germanium crystal growth at the University of South Dakota, Guojian Wang, Hao Mei, **Dongming Mei**, Yutong Guan, and Gang Yang, IOP Science Journal of Physics: Conference Series, V606 (2015) 012012.
  19. Study on the properties of high-purity germanium crystals, G. Yang, H. Mei, Y.-T. Guan, G.-J. Wang, **D.-M. Mei**, K. Irmscher, IOP Science Journal of Physics: Conference Series, V606 (2015) 012013.
  20. Zone refinement of germanium crystals, G. Yang, Y.-T. Guan, F.-Y. Jian, M.-D. Wanger, H. Mei, G.-J. Wang, S.-M. Howard, **D.-M. Mei**, A. Nelson, J. Marshai, K. Fitzgerald, C. Tenzin and X. Ma, IOP Science Journal of Physics: Conference Series, V606 (2015) 012014.
  21. Study well-shaped germanium detectors for low-background counting, W.-Z. Wei, **D.-M. Mei**, and C. Zhao, IOP Science Journal of Physics: Conference Series, V606 (2015) 012019.
  22. G. Wang, Y. Sun, G. Yang, W. Xiang, Y. Guan, **D.-M. Mei**, C. Keller and Y.-D. Chan, "Development of large size high-purity germanium crystal growth," Journal of Crystal Growth, 352 (1), 27-30 (2012).
  23. G. Wang, Yutong Guan, Hao Mei, **Dongming Mei**, Gng Yang, Jayesh Govani, Muhammad Khizar, "Dislocation density control in high-purity germanium crystal growth," Journal of Crystal Growth, 393 (2014) 54-58.
  24. G. Yang, Jayesh Govani, Hao Mei, Yutong Guan, Guojian Wang, Mianliang Huang and **Dongming Mei**, "Investigation of influential factors on the purification of zone-refined germanium ingot," Crystal Research and Technology, V 49, (2014) 269-275.
  25. G. Yang, G. Wang, W. Xiang, Y. Guan, Y. Sun, **D.-M. Mei**, B. Gray, Y.-D. Chan, "Radial and axial impurity distribution in high-purity germanium crystals," Journal of Crystal Growth, 352 (1), 43-46 (2012).
  26. G. Yang, **D.-M. Mei**, J. Govani, G. Wang, M. Khizar, "Effect of annealing on contact performance and electrical properties of p-type high purity germanium single crystal," Applied Physics A, DOI 10.1007/s00339-012-7518-x (2013).
  27. G. Wang, Y. Sun, Y. Guan, **D.-M. Mei**, G. Yang, A. A. Chiller, B. Gray, "Optical Methods in Orientation of High-Purity Germanium Crystal," Journal of Crystallization Process and Technology, 3, 60-63 (2013).
  28. Improving Photoelectron Counting and Particle Identification in Scintillation Detectors with Bayesian Techniques, M. Akashi-Ronquest et al., arXiv:1408.1914. Astropart. Phys. 65 (2014) 40 -54.
  29. Update on the MiniCLEAN Dark Matter Experiment, K. Rielage et al., arXiv:1403.4842. Phys. Procedia 61 (2015) 144-152.
  30. Radiogenic and Muon-Induced Backgrounds in the LUX Dark Matter Detector, D.S. Akerib et al., arXiv: 1403.1299, Astroparticle Physics V62 (2014) 33-46.
  31. A Detailed Look at the First Results from the Large Underground Xenon (LUX) Dark Matter Experiment, Matthew Szydagis et al., arXiv:1402.3731.
  32. First results from the LUX dark matter experiment at the Sanford Underground Research Facility, D.S. Akerib et al., (LUX Collaboration), Phys. Rev. Lett 112 (2014)091303.
  33. The Majorana Double Beta Decay Experiment: Present Status, E. Aguayo et al., DOI:10.1142/9789814436830\_0035.
  34. A Segmented, Enriched N-type Germanium Detector for Neutrinoless Double Beta-Decay Experiments , L.E. Leviner et al., Nucl. Instrum. Meth. A375 (2014) 66-77.
  35. Systematic Effects in Pulse Shape Analysis of HPGe Detector Signals for  $0\nu\beta\beta$ , V. M. Gehman, S. R. Elliott, and **D. M. Mei**, ArXiv: 0907.2940, Nucl. Instr. And Meth. A 615 (2010) 83-92.

36. Neutron inelastic scattering and reactions in natural Pb as a background in neutrinoless double-beta decay experiments, Guiseppe, V. E.; Devlin, M.; Elliott, S. R.; Fotiades, N.; Hime, A.; **Mei, D. -M.**; Nelson, R. O.; Perepelitsa, D. V. , arXiv:0809.5074, 09/2008, PRC 79, 054604 (2009).
37. Neutrons Inelastic Scattering Processes as a Background for Double-Beta Decay Experiments, **D.-M. Mei**, S. R. Elliott, V. M. Gehman, A. Hime, and K. Kazkaz, Nucl-ex/0704.0306, PRC 77, 054614 (2008).
38. Depletion of  $^{39}\text{Ar}$  for Liquid Argon detectors of Dark Matter Search Nuclear Physics A, Volume 834, Issues 1-4, 1 March 2010, Pages 813c-815c Yongchen Sun, **Dongming Mei** , Jason Spaans, Christina Keller.
39. CUBED: South Dakota 2010 Research Center For DuseL Experiments Nuclear Physics A, Volume 834, Issues 1-4, 1 March 2010, Pages 816c-818c Christina Keller, Drew Alton, Xinhau Bai, Dan Durben, Jaret Heise, Haiping Hong, Stan Howard, Chaoyang Jiang, Kara Keeter , Robert McTaggart, Dana Medlin, **Dongming Mei** , Andre Petukhov, Joel Rauber, Bill Roggenthen, Jason Spaans, Yongchen Sun, Barbara Szczerbinska, Keenan Thomas, Michael Zehfus, Chao Zhang.
40. Development of a Custom CRDS-based Trace Gas Analyzer for Argon and Xenon Nuclear Physics A, Volume 834, Issues 1-4, 1 March 2010, Pages 819c-822c K.J. Keeter, D. Durben, M. Zehfus, C. Galbiati, **D. Mei**, Y. Sun , A. Alton.
41. Studies on cosmogenic production as a background for rare physics processes Nuclear Physics A, Volume 834, Issues 1-4, 1 March 2010, Pages 823c-825c Z.-B. Yin, **D.-M. Mei**, S.R. Elliott.
42. Astroparticle Physics with a Customized Low-Background Broad Energy Germanium Detector. By the Majorana Collaboration (C. E. Aalseth et al.) Jul 2010, e-Print: arXiv: 1007.3231 [nucl-ex].
43. Cosmic Ray Muon Flux at the Sanford Underground Laboratory at Homestake. F. E. Gray, C. Ruybal, J. Totushek, **D.-M. Mei**, K. Thomas, C. Zhang, Jul 2010, e-Print: arXiv:1007.1921 [nucl-ex], NIM A 638 (2011) 63 - 66.
44. Fluorescence Efficiency and Visible Re-emission Spectrum of Tetraphenyl Butadiene Films at Extreme Ultraviolet Wavelengths, V. M. Gehman, S. R. Seibert, K. Rielage, A. Hime, Y. Sun, **D.-M. Mei**, J. Maassen, D. Moore, arXiv: 1104.3259.
45. The Majorana Project. By Majorana Collaboration (C. E. Aalseth et al.). J. Phys. Conf. Ser. 203:012057, 2010, e-Print: arXiv: 0910.4598 [nucl-ex].
46. The Majorana Demonstrator: A R & D project towards a tonne-scale germanium neutrinoless double-beta decay search. By Majorana Collaboration (C. E. Aalseth et al.) July 2009, AIP Conf. Proc. 1182:88-91, 2009. E-Print: arXiv:0907.1581 [nucl-ex].
47. The LUX dark matter search. D. N. McKinsey et al., 2010. J. Phys. Conf. Ser. 203:012026, 2010.
48. Status of the LUX Dark Matter Search. S. Fiorucci et al., Dec. 2009. AIP Conf. Proc. 1209:977-980, 2010. E-Print: arXiv: 0912.0482 [astro-ph.CO].
49. Pulse Shape Analysis in Segmented Detectors as a technique for Background Reduction in Ge Double-Beta Decay experiments, S.R. Elliott, V.M. Gehman, K. Kazkaz, **D.-M. Mei** and A.R. Young, NIM A 558 (2006) 504, nucl-ex/0509026.
50. Measurement of Neutrino Oscillation with KamLAND: Evidence of Spectral Distortion, The KamLAND collaboration, PRL V.94, 081801 (2005), hep-ex/0406035.
51. A High Sensitivity Search for Anti-Neutrinos from the Sun and other Sources at KamLAND, The KamLAND collaboration, PRL V.92, 071301 (2004), hep-ex/0310047.
52. A High Sensitivity Search for Nu-e-bar's from the Sun and Other Sources at KamLAND, The KamLAND Collaboration, PRL, V92, 071301, (2004).
53. First Results from KamLAND: Evidence for Reactor Anti-Neutrino Disappearance, the KamLAND Collaboration, PRL v90, 021802,(2003).
54. High Altitude Test of RPCs for the Argo YBJ Experiment, the ARGO-YBJ Collaboration, NIM, A 443 (2000) 342-350.
55. Results from the Analysis of Data Collected with a 50 m<sup>2</sup> RPC Carpet at YangBaJing, the ARGO-YBJ Collaboration, NIM, A 456 (2000) 121-125.
56. A Site Search for A Cosmic Ray Station Above 6000 M Elevation in Tibet", L.W.Jones and D.M. Mei, Proc. 26th ICRC (Utah), HE.6.408.
57. Sun's Shadow by 10 TeV Cosmic Rays under the Influence of the Solar Activity, the Tibet ASg Collaboration, Adv. Space Res. vol 23 611 (1999).
58. The Use of RPC in the ARGO-YBJ Project, the ARGO-YBJ Collaboration, Nuclear Physics B (Proc. Suppl.) 78 (1999) 38-43.

59. The ARGO-YBJ Detector and High Energy GRBs, the ARGO-YBJ Collaboration, *Astron. Astrophys. Suppl. Ser.* 138, 597-598 (1999).
60. Shadowing of Cosmic Rays by the Sun near Maximum or at the Declining Phase of Solar Activity, the Tibet ASg Collaboration, *ApJ*, 464, 954-958 (1996).
61. The Cosmic Ray Energy Spectrum between  $10^{14.5}$  and  $10^{16.3}$  eV Covering the "Knee" Region, the Tibet ASg Collaboration, *ApJ*, 461, 408-414 (1996).
62. Search for 10 TeV Burst-Like Events Coincident with the BATSE Burst Using the Tibet Air Shower Array, the Tibet ASg Collaboration, *A & A*, 311, 919-926 (1996).
63. Neural Network Approach to Obtain the Primary Proton Flux at the Knee from a Hybrid-Experiment of EC and AS Array in Tibet, the Tibet ASg Collaboration, *NIM*, A376, 263 (1996).
64. Search for 10 TeV Gamma-Ray Emission from Active Galactic Nuclei with the Tibet Air Shower Array, the Tibet ASg Collaboration, *ApJ*, 429, 634-637 (1994).
65. Cosmic Ray Deficit from the Directions of the Moon and the Sun Detected with the Tibet Air Shower Array, the Tibet ASg Collaboration, *Phys. Rev.*, D47, 2675-2681 (1993).
66. Intensity of Protons at "Knee" of the Cosmic Ray Spectrum, the Tibet ASg Collaboration, *Astrop. Phys.*, 1, 257-267 (1993).
67. Direct Evidence of the Interplanetary Magnetic Field Effect on the Cosmic-Ray Shadow by the Sun, the Tibet ASg Collaboration, *ApJ*, 415, L147-L150 (1993).
68. Search for Steady Emission of 10-TeV Gamma Rays from the Crab Nebula, Cygnus X-3 and Hercules X-1 Using the Tibet Air Shower Array, the Tibet ASg Collaboration, *Phys. Rev. Lett.*, 69, 2468-2471 (1992).
69. Photodiode Sensed Scintillation Counter for Detection of a Large Number of Cascade Shower Electrons, the Tibet ASg Collaboration, *NIM*, A300, 202-206, (1991).
70. Development and Performance Test of a Prototype Air Shower Array for Search for Gamma Ray Point Sources in the Very High Energy Region, the Tibet ASg Collaboration, *NIM*, A288, 619-631, (1990).
71. A Monitoring System for Fast-Timing Scintillation Counters Used for Detection of Air Showers, the Tibet ASg Collaboration, *NIM*, A285, 532-539, (1989).

### **SELECTED CONFERENCE PRESENTATIONS AND PARTICIPATIONS SINCE 2006**

1. GEMADARC R&D Activities and Challenges for next generation detectors, International Workshop on Germanium Detectors and Technologies, December 5<sup>th</sup>, 2018, Knoxville, TE, USA.
2. Seminar: Dark Matter and Cosmology, Yunnan University, Kunming, June 26, 2018.
3. Invited Talk: PIRE-GEMADARC, Germanium detectors and technology workshop at LBNL, Dec. 4-5, 2017, LBNL.
4. Seminar: Direct Dark Matter Searches, Yangtze University, Jingzhou, China. Nov. 23 2017.
5. Development of Ge detectors with internal amplification for MeV-scale dark matter detection, Conference on Science at the Sanford Underground Research Facility, May 12-16, 2017, South Dakota Schools and Mines.
6. Direct detection of MeV-scale dark matter utilizing germanium internal amplification for the charge created by the ionization of impurities, U.S. Cosmic Vision: New Ideas in Dark Matter (23-March 25, 2017).
7. Seminar: Next generation Ge-based dark matter experiments, Chengdu, Si Chuan University, Nov.17, 2016.
8. Seminar: Development of large-size germanium detectors for ton-scale Ge-based experiments, Jingzhou, Yangtze University, China, Nov. 22, 2016.
9. Invited Talk: Crystal Growth and Detector Development at USD, Symposium on Germanium Detectors and Technologies, Ringburg, Germany, Oct. 18-24, 2015.
10. Invited Talk: PIRE: A Global Collaboration on Advanced Germanium Detectors and Technologies, Symposium on Germanium Detectors and Technologies, Ringburg, Germany, Oct. 18-24, 2015.
11. Invited Talk: A p-type point-contact HPGe detector with amorphous Ge surface, Symposium on Germanium Detectors and Technologies, Ringburg, Germany, Oct. 18-24, 2015.
12. Invited Talk: Low Energy Response for Dark Matter Searches, An International Workshop on Low Energy Calibration at University of Chicago, September 23, 2015.
13. Seminar: Development of Large-Size Germanium Detectors for Rare Event Physics, Seminar at Lawrence Berkeley National laboratory, August 21, 2015.

14. Invited Talk: Development of Large-Size Germanium Detectors for Dark Matter Searches, Workshop on Dark Matter Searches, Lawrence Berkeley National Laboratory, June 8-9, 2015.
15. Invited Talk: Development of Large-Size Germanium Detectors for Neutrinoless Double-Beta Decay, Conference on Science at Sanford Underground Research Facility, May 17-20, 2015.
16. Invited Talk at Tsinghua University: Germanium Crystal Growth and Detector Development for Ton-Scale Neutrinoless Double-Beta Decay Experiment, Beijing China, May, 2012.
17. Invited Talk at Sichuan University: Germanium Detector for Dark Matter Detection, Chengdu, China, May 2012.
18. Invited Talk at Shanghai Jiaotong University: Ton-Scale neutrinoless double-beta decay experiment in China, Shanghai, China, May 2012.
19. Invited Talk at China Science and Technology University: Large-scale solar neutrino experiment in China. Hefei China, May 2012.
20. Invited Talk at Three Gorges University: Dark Matter Searches in US, Yichang, China, May 2012.
21. Invited Talk at Huazhong Normal University: Underground Experiments for Dark Matter and Neutrinoless Double-Beta Decay, Wuhan China, May 2013.
22. Invited Talk at Southwest Jiaotong University: Germanium Crystal Growth and Detector Development at USD for Large-Scale Experiments, Chengdu, China, May 2014.
23. Invited Talk at Sichuan University: Underground Experiments for New Science, Chengdu China, May 2014.
24. Invited Talk at China University of Geoscience in Wuhan: Germanium Crystal growth and Detector Development, Wuhan China, May 2014.
25. Invited Talk at Yangtze University: To be or not to be: Dark Matter, Jingzhou China, May 2014.
26. Invited Talk at Yangtze University: Neutrinoless Double-Beta Decay, Jingzhou China, May 2014.
27. Geo-neutrino Physics at CJPL, Asmilomar, CA, 13th International Conference on Topics in Astroparticle, September 8 – 13, 2013.
28. Large crystal growth and detector development at USD, APS DNP, Hawaii, Oct. 8<sup>th</sup>, 2014.
29. Development of next generation germanium detector for rare event physics, the 2<sup>nd</sup> Workshop on Germanium Detectors and Technologies, Vermillion, SD, 14-17<sup>th</sup> September 2014.
30. NSF PIRE Consortium, SD 100<sup>th</sup> Academy and Science Anniversary, Cedar Shore Resort, SD, April 11, 2015.
31. Dark Matter and Neutron Physics, Sigma Pi Sigma Seminar, USD, 2014.
32. Crystal growth and detector development at USD, International Symposium on germanium detector and technology, Tsinghua University, Beijing, China;
33. Development of large germanium detector for rare event physics, International Symposium on germanium detectors and technology, Tsinghua University, Beijing, China.
34. CUBED low-background count facility at SURF, APS April meeting, Savannah, GA, April 4-8, 2014.
35. Summary of Cosmogenic Simulation Results, LBNE report, LBNE collaboration meeting, December 1<sup>st</sup>, 2012, Houston.
36. Ton-Scale neutrinoless double-beta decay experiment in China, International conference on Flavor Physics and CP violation, Hefei, China, May 24, 2012.
37. Crystal growth underground breed extra-sensitive detectors, PAC review, SURF, December 114<sup>th</sup>, 2011.
38. Invited Talk: 2011 Cosmogenic Activities and Background Workshop – Berkeley, LBNL, April 14, 2011.
39. DOE Site Visit Review Talks for Crystal Growth and Detector Development at Homestake for DUSEL Experiments.
40. Invited Talk at Underground Crystal Growth Facility at DUSEL, Invited talk on Workshop on Germanium-Based Detectors and Technology, May 18-20, 2010, Berkeley, CA.
41. Measuring Neutrinoless Double Electron Capture with  $^{124}\text{Xe}$  in Xenon Experiments, D.-M. Mei, J. Spaans, C. Zhang, APS April Meeting, B8 5, Feb. 13-17, 2010, Washington D.C.
42. Improvement of Geant4 simulation in Nuclear Internal Conversion Model, C. Zhang, D.-M. Mei, APS April Meeting, B8 10, Feb. 13-17, Washington D.C.
43. External Background Characterization of Homestake Mine for DUSEL, K. Thomas, D.-M. Mei, C. Zhang, APS April Meeting, P10 6, Feb. 13-17, Washington D.C.
44. CUBED Crystal Growth, D.-M. Mei for the CUBED Collaboration, APS March Meeting, Dallas, TX, 2011.
45. CUBED Crystal Growth, D.-M. Mei for the CUBED Collaboration, SD Academy, 2011.

46. Update on External Background Characterization of Homestake Mine for Sanford Lab and DUSEL, C. Zhang, D.-M. Mei, K. Thomas, F. Gray, J. Heise, D. Durben, APS DNP, HD 4, Nov. 2-6, 2010, Santa Fe, NM.
47. Segmented CdWO<sub>4</sub> detector for low background experiments at DUSEL, D.-M. Mei, Y.-C. Sun, A. Day, K. Thomas, O. Perevozchikov, APS DNP, HD 8, Nov. 2-6, 2010, Santa Fe, NM.
48. Argon Depletion for a Large Scale Dark Matter Detector, D. Byram, J. Spaans, D.-M. Mei, Y.-C. Sun, C. Keller, D. Nowotny, APS DNP, HD 9, Nov. 2-6, 2010, Santa Fe, NM.
49. Invited Talk at the Institute of High Energy Physics (IHEP), Academic Sinica, Beijing, China, August 16<sup>th</sup>, 2009, Neutrinoless Double-Beta Decay.
50. Invited talk at University of Delaware, CUBED research Activities, June 4<sup>th</sup>, 2009
51. Invited talk at Huazhong Normal University in China, Ultra-Low Background Experiments at DUSEL, June 30<sup>th</sup>, 2007.
52. Invited talk at Three Gorges University in China, Low Energy Neutrino Physics at DUSEL, July 4<sup>th</sup>, 2009.
53. Center for Ultra-Low Background Experiments at DUSEL (CUBED), APS DNP, Hawaii, Oct. 18<sup>th</sup>, 2009.
54. Measuring Muon-Induced Processes at Homestake, APS DNP, Hawaii, Oct. 18<sup>th</sup>, 2009.
55. A Toolkit for Calculating (alpha, n) Neutron Yield and Energy Spectrum for DUSEL Experiments, APS DNP, Hawaii, Oct. 18<sup>th</sup>, 2009.
56. CdWO<sub>4</sub> and APD for Low Energy Neutrino Experiments at DUSEL, APS DNP, Hawaii, Oct. 18<sup>th</sup>, 2009.
57. External Background Characterization at Homestake for DUSEL Experiments, APS DNP, Hawaii, Oct. 18<sup>th</sup>, 2009.
58. Depleted Argon as Dark Matter Detector at DUSEL, APS DNP, Hawaii, Oct. 18<sup>th</sup>, 2009.
59. Depleted Argon as a dark matter detector at DUSEL, APS April Meeting, Denver, T12, 2009.
60. Gamma-ray flux at Different Levels in the Homestake Mine Measured with NaI detectors, APS April Meeting, Denver, T12, 2009.
61. Measured Muon and Neutron Flux at Different Levels in the Homestake Mine, APS Apr. meeting, Denver, T12, 2009.
62. Monte Carlo Simulation of Homestake Background, APS April Meeting, Denver, T12, 2009.
63. Radon as a Source of External Background at Homestake Mine, APS April Meeting, Denver, W12 2009.
64. Measuring External Sources of Background at Homestake, APS April Meeting, St. Louis, Apr. 12-15, 2008.
65. Depletion of <sup>39</sup>Ar for Direct Dark Matter Experiments, APS April Meeting, St. Louis, MO, April 12-15, 2008.
66. A Model of Nuclear Recoil Scintillation Efficiency in Noble Liquids, APS DNP, Oakland, CA, Oct.23-26.
67. DUSEL Low-Background Counting Facility at Homestake, The DUSEL Workshop, April 26-28, Lead, SD.
68. External Sources of Background Evaluation for DUSEL, The DUSEL Workshop, April 26-28, Lead, SD.
69. DUSEL Research Projects, Invited seminar in SDSTC, Sioux Falls, August 19, 2008.
70. DUSEL Research Projects, Invited seminar in Sigma XI, USD, Oct.21, 2008.

**Citations:**

Up to September 14 2020, my work has been cited 14,862 times by peers in the field.