Michael Poehlmann

Personal Information

Full Name: David-Michael T. Poehlmann
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Education

Present | PhD candidate in Physics, **University of California, Davis**, Davis, CA
Sept 2018 | Degree expected in 2023
GPA: 3.55/4

May 2018 | Honors BSc in Physics, *cum laude*, **University of Minnesota**, Minneapolis, MN
Sept 2014 | GPA: 3.60/4

Research Experience

Present | DarkSide Collaboration, **University of California, Davis**
Jul 2018 | *PI: Prof. Emilija Pantic*
Worked on experimental design, data acquisition system development, hardware development, and detector commissioning for ARIS-ER. Ran Monte Carlo simulations in Geant4 for the design of DarkSide-20k, with a focus on backgrounds and optical modeling. Contributed to the analysis of data collected by DarkSide-50.

Jun 2018 | Cryogenic Dark Matter Search (CDMS) Collaboration, **University of Minnesota**
Jan 2016 | *PI: Prof. Priscilla Cushman*
Developed components for the active neutron veto of the proposed SuperCDMS SNOLAB detector. Worked on loading gadolinium into plastic scintillator and characterized sample properties.

Jun 2017 | Light Dark Matter eXperiment (LDMX) Collaboration, **University of Minnesota**
Jan 2017 | *PI: Prof. Jeremiah Mans*
Measured the event discrimination efficiency of thin plastic scintillator sheets for the LDMX experiment.

Jun 2016 | Greven Research Group, **University of Minnesota**
Sept 2015 | *PI: Prof. Martin Greven*
Grew and analyzed Hg1201 crystals to collect data on possible mechanisms behind high-temperature superconductivity. Tasks included crystal growth in conventional box furnaces, sample annealing, and measurements of susceptibility using a MPMS instrument.

Publications

1. D. M. Poehlmann, et al., Characterization of gadolinium-loaded plastic scintillator for use as a neutron veto, Submitted to NIM A for review (2018). arXiv:1812.11267
   First-authored publication. Performed majority of sample fabrication, characterization, and data analysis described in paper.

Presentations

1. D. M. Poehlmann, The DarkSide-20k experiment in 10 minutes, new Perspectives 2020 Conference, Fermilab (July 2020).
   URL https://indico.fnal.gov/event/23110/contributions/191314/
   Talk given virtually at the Fermilab New Perspectives 2020 conference.

2. D. M. Poehlmann, Argon recoil ionization and scintillation from electron recoils (ARIS-ER), 2019 Fall Meeting of the Far West Section of the American Physical Society Conference, Stanford (Nov 2019).
   URL http://absimage.aps.org/image/FWS19/MWS_FWS19-2019-000118.pdf
   Poster presented at the 2019 APS Far West Section Conference at Stanford University.

Honors and Fellowships Received

2020 | Honorable Mention, Graduate Research Fellowship Program, **National Science Foundation**
2019 | F. Paul Brady Graduate Fellowship, **University of California, Davis**
2014-2018 | Gold Scholar Award, **University of Minnesota**
2014-2018 | Dean's List, College of Science and Engineering, **University of Minnesota**
2014 | National Merit Scholar, **National Merit Scholarship Corporation**

Outreach Efforts

Present – Jan 2020 | Nuclear Forensics, **University of California, Davis**
Helped to develop an outreach program to provide undergraduate students with an introduction to experimental high energy physics. The program, entitled "Nuclear Forensics: Dusting for the Fingerprints of Radioactivity," seeks to provide untapped groups with a hands-on experience to identify trace radioisotopes through Neutron Activation Analysis.

Relevant Skills

Basic Knowledge:	Machine shop training
Intermediate Knowledge:	Machine learning, Bash, LaTeX
Advanced Knowledge:	C/C++, Python, Geant4 (including optical Monte Carlos), ROOT, MS Office

Teaching Experience

Fall 2018 | Physics 7A, **University of California, Davis**
Taught lab and discussion sections for an introductory physics course for non-physics majors.