

Claire Pettersen

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Education

PhD Atmospheric and Oceanic Sciences University of Wisconsin, Madison	2014 – Present
MS Atmospheric and Oceanic Sciences University of Wisconsin, Madison	2011 – 2014
MS Materials Science and Engineering University of Wisconsin, Madison	2001 – 2004
BA Physics and Astronomy Carleton College	1996 – 2000

Experience

University of Wisconsin-Madison:

Space Science and Engineering Center

Associate Instrumentation Innovator

2013 – Present

Assistant Instrumentation Innovator

2009 – 2013

- * Integral part of the initial testing team for the climate-observing system CLARREO
- * Studying phase-change materials for absolute temperature calibration
- * Aiding a phase-change microgravity research project for the International Space Station
- * Assisting field and science support for the Scanning High-Resolution Interferometer Sounder
- * Key involvement in instrument and science for the ICECAPS project in Greenland
- * Researching cloud properties and precipitation using radar (ground and satellite data)
- * Initiator and coordinator of the annual AOSS Poster Reception

Project IceCube

Engineering Manager

2007 – 2009

- * Managed, performed analysis of, and oversaw testing of all optical modules at UW site
- * Debugged and repaired software (test scripts) and hardware (computer and cable equipment)
- * Lead engineer for the pressure sphere and gel components of the optical modules

Winterover Experiments Researcher

2006 – 2007

- * Operated and maintained the IceCube and AMANDA detectors at the South Pole Station
- * Repaired hardware, including cable systems, NIM crates, fiber optics, and circuit boards
- * Participated in drilling and deployment during the Antarctic Summer season

Digital Optical Module (DOM) Test Engineer

2004 – 2006

- * Aided in the testing of 1000+ optical modules
- * Calibrated and tested fiber optics, lasers and monochrometers for optical module test system
- * Aided in planning, developing, and qualifying three new mobile, freezer testing laboratories

Select Publications

- * **Pettersen, et al.**, “Identifying Ice Hydrometeor Signatures above Summit, Greenland Using a Multi-Instrument Approach” (In preparation)
- * **Bennartz et al.**, “July 2012 Greenland melt extent enhanced by low-level liquid clouds” **Nature**, April 2013
- * **Pettersen et al.**, “On-Orbit Absolute Radiance Standard for Future IR Remote Sensing Instruments – Overview of Recent Technology Advancements” **Fourier Transform Spectroscopy**, June 2011
- * **Best et al.**, “On-orbit absolute temperature calibration using multiple phase change materials: overview of recent technology advancements” **SPIE Asia Pacific**, October 2010
- * **Pettersen and Cooper**, “Float-reaction between liquid bronze and magnesium aluminosilicate and ZnO-doped magnesium aluminosilicate glass–ceramic-forming glassmelts” **Journal of Non-Crystalline Solids**, February 2008