

# Benjamin L. Alterman

Address: 2455 Hayward Street, Ann Arbor, MI 48105  
Office: 2437 Space Research Building  
Phone: (617) 875-6904  
E-mail: balterma@umich.edu lala



---

## EDUCATION

---

### University of Michigan

2012–Present

PhD, Applied Physics expected 2018  
Thesis topic: Kinetic Physics of the Solar Wind at 1 AU  
Advisor: Dr. Justin C. Kasper

### Macalester College

2008–2012

B.A., Physics & Philosophy  
Senior Capstone: Collider Phenomenology of the Singlet Scalar  
Advisor: Dr. Tonnis ter Veldhuis

---

## RESEARCH EXPERIENCE

---

### University of Michigan

Present

Mentor: Dr. Justin C. Kasper

- Analyze ion differential streaming in the Wind Solar Wind Experiment (SWE) Faraday cup data.
- Collaborate on validation of a new three species data product from the Wind/SWE Faraday cups.

### Macalester College

2011

Mentor: Dr. Tonnis ter Veldhuis

- Predict the collider phenomenological signal of the Singlet Scalar extension to the Standard Model of particle physics.

---

## TEACHING EXPERIENCE

---

### Alterman Tutoring

8/2011–Present

- Tutor and mentor high school and college students in physics and math with a focus on developing individualized learning strategies; methods for self-teaching; and tools for self-advocacy.

### Introductory Physics for Life Sciences

5/2014–6/2014

- Graduate Student Instructor responsible for lecturing, grading, and writing lesson plans for one section of introductory physics for life science students.

### Introductory Physics for Engineers

5/2013–6/2013

- Graduate Student Instructor responsible for lecturing, grading, and writing lesson plans for three sections of introductory physics for engineering students.

### Electromagnetic Theory and Intro Physics Teaching Assistant

8/2011–4/2012

- Grade and tutor undergraduate introductory physics and upper level electromagnetism classes.

---

## POSTER PRESENTATIONS

---

1. Tracy, P. *et al.* *Heavy Ion Temperatures As Observed By ACE/Swics* in *AGU Fall Meet.* (AGU, 2014).
2. Whittlesey, P. *et al.* *Testing the Solar Probe Cup, An Instrument Designed to Touch the Sun* in *AGU Fall Meet.* (AGU, San Francisco, CA, 2014).
3. Alterman, B. L., Kasper, J. C. & Stevens, M. L. *Differential Flow: Locally Generated or Coronal Artifact?* in *SHINE Conf.* (Stowe, VT, 2015).
4. Alterman, B. L., Kasper, J. C. & Stevens, M. L. *Differential flow: Locally Generated or Coronal Artifact?* in *Eng. Grad. Symp.* (Ann Arbor, MI, 2015).
5. Alterman, B. L., Kasper, J. C., Stevens, M. L., Szabo, A. & Koval, A. *Differential flow: Locally Generated or Coronal Artifact?* in *AGU Fall Meet.* (San Francisco, CA, 2015).
6. Hegedus, A. *et al.* *Multi-scale Analysis of DSCOVR Data Using Wavelet Cross Correlation* in *AGU Fall Meet.* (San Francisco, CA, 2015).
7. Alterman, B. L., Stevens, M. L., Kasper, J. C. & Koval, A. *Alfvénicity of Ion Drifts at 1AU* in *SHINE Conf.* (2016).
8. Alterman, B. L., Stevens, M. L., Kasper, J. C. & Koval, A. *Alfvénicity of Ion Drifts at 1AU* in *AGU Fall Meet.* (2016).
9. Klein, K. G., Alterman, B. L., Kasper, J. C. & Korreck, K. E. *A General Identification of Instabilities in Solar Wind Plasma, and a Particular Application to the WIND Data Set* in *Eur. Geophys. Union* (2017).

---

## GRANT AWARDS

---

### **Rackham Dean’s Strategic Initiative Grant** **2013**

- Awarded to partially fund **Dare to Dream, UofM**, a film screening and panel discussion to raise awareness and build support for male survivors of sexual violence.

### **Bezos Aspen School Award** **2007**

- Awarded to support an interfaith conference about discussing misconceptions across cultural barriers.

---

## HONORS & FELLOWSHIPS

---

### **Harry Scherman Scholarship** **2010**

### **National Honor Society** **2008**

### **Bezos Aspen Scholarship** **2007**

---

## SERVICE TO THE UNIVERSITY

---

### **Rackham Representative, Central Student Government** **12/2012–1/2015**

- Vice-Chair, Rules Committee 4/2013–4/2014
- Vice-Chair, Inclusive Campus Commission 8/2014-1/2015

### **Dare to Dream, UofM** **8/2013–11/2013**

- A film screening and panel discussion to raise awareness and build support for male survivors of sexual violence.
- Responsible for all financial, programatic, marketing, and administrative aspects of the program, including fund raising, booking speakers, and coordinating student organizations and university departments.

---

## OUTREACH

---

### Lunch and Lab

1/2016

- Mentor undergraduate engineering students and advise them on connecting with professors, developing research opportunities, and pursuing research passionately.

### eXplore Engineering Rocket Workshop

6/2015

- Aid middle school students in building and testing air pressure rockets to investigate air drag, propulsion, launch angle, and the effects of wings on rocket flight.

### Middle School Demo Day

3/2013

- Prepare demonstration of electrostatic charges and engage students at the Slauson Middle School in Ann Arbor, MI with this demo.

---

## AFFILIATIONS

---

### American Geophysical Union

2014–Present

### American Physical Society

2014–Present

---

## COMPUTER PROGRAMMING LANGUAGES

---

- Python
- LaTeX
- Mathematica
- LabView