

OCTOBER 2016

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## FIRST-AUTHOR/CO-AUTHOR PUBLICATIONS

Possible signatures of dissipation from time series analysis techniques using a turbulent laboratory MHD plasma D.A. Schaffner, M.R. Brown, and A. Roy Physics of Plasmas 23 055709 (2016)

Multifractal and Monofractal Stalling in a Laboratory Magnetohydrodynamic Turbulence Experiment. Schaffner and M. R. Brown. The Astrophysical Journal

## ACTIVITIES AND OUTREACH

Director of Graduate Recruiting, Department of Physics, Bryn Mawr College

Co-organizer for Global Plasma Month [www.facebook.com/GlobalPlasmaMonth](http://www.facebook.com/GlobalPlasmaMonth)

Served as referee for Physical Review Letters, Physics of Plasmas, Journal of Plasma Physics, and IEEE Transactions on Plasma Science

Served as a panel and ad-hoc reviewer for the NSF STOE Basic Plasma Science and Engineering program

Founding member and organizer for the Young DRPS Community

Member of the University Fusion Association (UFA)

Member of the Young CMSO (Center for Magnetic Self-Organization)

Member of the American Physical Society (APS)

Member of the American Geophysical Union (AGU)

Participant in the American Institute of Physics (AIP) -A-

Webmaster and content manager of the Bryn Mawr Physics website: [www.brynmawr.edu/physics](http://www.brynmawr.edu/physics)

Speaker for Nerd Nite

## MEDIA

American Institute of Physics Physics of Plasma Journal PlasmaTalks Audio Podcast

Turbulence and transport suppression scaling with flow shear on the Large Plasma Device  
<http://scitation.aip.org/content/aip/journal/pop/info/media>

Physics Central Physics Buzz Blog Audio Podcast.

Solar Winds and Hot Plasma Experiments

<http://physicsbuzz.physicscentral.com/2014/12/podcast-solarwinds-and-hot-plasma.html>

Bryn Mawr College Website Profile

*Researchers Turn to Plasma to Harness the Power of Fusion*

<https://www.brynmawr.edu/news/research/plasmaharnesspower>

## FULL BIBLIOGRAPHY

### FIRST-AUTHOR/CO-AUTHOR PUBLICATIONS

- Possible signatures of dissipation from time series analysis techniques using a turbulent laboratory MHD plasma D.A. Schaffner, M.R. Brown, and A. Rock. *Physics of Plasmas* 23:055709 (2016)
- Multifractal and Monofractal Scaling in a Laboratory Magnetohydrodynamic Turbulence Experiment D.A. Schaffner and M. R. Brown. *The Astrophysical Journal* (2015).
- The SSX MHD Wind Tunnel M.R. Brown and D. A. Schaffner. *Journal of Plasma Physics* 81:0302 (2015).
- Laboratory sources of turbulent plasma: a unique MHD plasma wind tunnel M.R. Brown and D. A. Schaffner. *Plasma Sources and Science Technology* 23:063001 (2014).
- Temporal and Spatial Turbulent Spectra of MHD Plasma and an Observation of Variance Anisotropy, Schaffner, M.R. Brown and V.S. Lukin. *The Astrophysical Journal* 790:126 (2014).
- Observation of turbulent intermittency scaling with magnetic field in MHD plasma wind tunnel D.A. Schaffner, A. Wan and M.R. Brown. *Physical Review Letters* 112:165001 (2014).
- Turbulence analysis of an experimental flux rope. D.A. Schaffner, V.S. Lukin, A. Wan, M.R. Brown. *Plasma Physics Controlled Fusion*

Energy dynamics in a simulation of LAPD turbulence. Friedman, T. A. Carter, M. V. Umansky, D. Schaffner, and B. Dudson. *Physics of Plasmas* 19 102307 (2012).

Sheared flow induced confinement transition in a linear magnetized plasma. Zhou, W. W. Heidbrink, H. Boehmer, R. McWilliams, T. A. Carter, S. Vincena, B. Friedman, and D. Schaffner. *Physics of Plasmas* 19 012116 (2012).

Diamond pixel module. Asner et al, The RD42 Collaboration. *Nuclear Instruments and Methods in Physics Research A: Accelerators, Spectrometers, Detectors and Associated Equipment* 636, Issue 1, Supplement 21, S1251-29 (2011).

Absorption of fast waves at moderate to high ion cyclotron harmonics. Pindker, M. Porkolab, W.W. Heidbrink, Y.Luo, C.C. Petty, R. Prater, D.A. Schaffner, F.W. Baity, E. Fredd, J.C. Hosea, R.W. Harvey, A.P. Smirnov, M. Murakami and M.A. Van Zeeland. *Nuclear Fusion* 46 S424 (2006).

#### MANUSCRIPTS IN PREPARATION

- Angular intermittency of a turbulent MHD laboratory plasma
- Spatial correlations in a turbulent MHD laboratory plasma

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Invited Talk. Modification of Turbulent Transport with Continuous Variation of Flow Shear in the Large Plasma Device. American Physical Society Division of Plasma Physics Meeting. Providence, RI, November 2012.

Contributed Oral. Observation of improved and degraded confinement through driven flow on the LAPD. US Joint Transport Task Force Meeting. Padua, Italy, August 2012.

Invited Talk. Observation of improved and degraded confinement through driven flow on the LAPD. International Workshop for Open Systems. International Work Shop on Plasma Material Interaction Facilities for Fusion Joint Conference. Tsukuba, Japan, July 2012.

Contributed Oral. Observation of improved and degraded confinement through driven flow on the LAPD. General Atomics Science Meeting. San Diego, CA, May 2012.

Plenary Talk. Observation of improved and degraded confinement through driven flow on the LAPD. Transport Task Force Workshop. Annapolis, MD, April 2012.

Seminar. Observation of improved and degraded confinement and reduction of particle flux through driven flow on the LAPD. UCLA Plasma Seminar Series. Los Angeles, CA, February 2012.

Contributed Oral. Turbulence and Flow in the Large Plasma Device. Kinetics in Laboratory and Astrophysical Plasmas Conference at the Isaac Newton Institute of Mathematical Sciences. Cambridge, June 2010.

## POSTERS

- Plasma Accelerator on the Swarthmore Spheromak Experiment: An Exploration of the Compressed Taylor State as a Fusion Target. ~~GP~~ ~~AE~~ Energy Innovation Summit. National Resort, MD. February 2016.
- Plasma Accelerator on the Swarthmore Spheromak Experiment: Exploration of the Compressed Taylor State as a Fusion Target. ~~GP~~ ~~AE~~ ALPHA Program Kickoff Meeting. Santa Fe, NM. October 2015.
- Plasma Physics at the ~~Tri~~ ~~Laboratory~~ Astrophysics and Fusion Studies. ~~UC~~ ~~LIAS~~ PlasmaFest, Westwood, CA. September 2015.
- Heliospheric Relevant Turbulence in Laboratory Plasmas. ~~SH~~ ~~AE~~ Conference. Stowe, VT, July 2015.
- Heliospheric Relevant Turbulence in Laboratory Plasmas. ~~DE~~ ~~PA~~ Department of Energy Town Hall Meeting. Bethesda, MD, June 2015.
- Turbulence analysis of an MHD Wind Tunnel. ~~Am~~ ~~erican~~ Physical Society Division of Plasma Physics Meeting. New Orleans, LA, November 2014.
- Turbulence analysis of an MHD Wind Tunnel. ~~So~~ ~~let~~. Heliospheric & Interplanetary Environment Meeting. Telluride, CO, June 2014.
- Turbulence scaling study in an MHD tunnel on the Swarthmore Spheromak Experiment. ~~Am~~ ~~erican~~ Physical Society Division of Plasma Physics Meeting. Denver, CO, November 2013.
- Mode Analysis and Dynamics of driven rotation on the Large Plasma Device. ~~US~~ ~~DOE~~ Joint Transport Task Force Workshop. Santa Rosa, CA, April 2013.
- Observation of improved and degraded confinement through driven flow on the Large Plasma Device. ~~Am~~ ~~erican~~ Physical Society Division of Plasma Physics Meeting. Salt Lake City, UT, November 2011.
- A spectral analysis for mode identification on LAPD edge turbulence. ~~US~~ ~~DOE~~ Joint Transport Task Force Workshop. San Diego, CA, April 2011.
- Flows, turbulence, and transport in the Large Plasma Device. ~~Am~~ ~~erican~~ Physical Society Division of Plasma Physics Meeting. Chicago, IL, ~~Nov~~ ~~ber~~ 2010.
- Studies of flow generation and momentum transport in LAPD. ~~US~~ ~~DOE~~ Joint Transport Task Force Workshop. Annapolis, MD, April 2010.
- Investigation of flows in LAPD and their relation to edge turbulence and intermittent phenomena. ~~Am~~ ~~erican~~ Physical Society Division of Plasma Physics Meeting. Atlanta, GA, November 2009.
- Evaluation of Ion Cyclotron Harmonic Damping on Maxwellian Distribution Functions. ~~Am~~ ~~erican~~ Physical Society Division of Plasma Physics Meeting. Denver, CO, November 2005.

## DOCTORAL THESIS

Study of Flow, Turbulence and Transport on the Large Plasma Device