

Seth Pree

Staff scientist at Helicity Space Corp.

seth.pree@helicityspace.com

sethLpree@gmail.com

sethpree.com

Education

Postdoctoral Scholar in Applied Physics July 2020-July 2023

California Institute of Technology, Pasadena, CA

Advisor: Paul Bellan

Ph.D. in Physics September 2020

University of California, Los Angeles, Los Angeles, CA

Dissertation: [Acoustic Confinement and Characterization of a Microwave Plasma](#)

Advisor: Seth Putterman

B.S. in Applied and Engineering Physics May 2013

Cornell University, Ithaca, NY (McMullen Dean's Scholar)

Publications

Generation of laboratory nanoflares from multiple braided plasma loops

Y. Zhang, S. Pree, P. M. Bellan,

[Nature Astronomy 7, 655-661 \(2023\)](#)

Research Briefing: [Solar nanoflares erupt from a laboratory experiment.](#)

Thermal Convection in a Central Force Mediated by Sound

J. P. Koulakis, Y. Ofek, S. Pree, and S. Putterman,

[Phys. Rev. Lett. 130, 034002 \(2023\)](#)

Physics Focus: M. Schirber, [Sound Waves Mimic Gravity. Physics 16 \(2023\): 10.](#)

Imaging suprathermal x-rays from a laboratory plasma jet using PIN-diode-based and scintillator-based 1D pinhole/coded aperture cameras

Y. Zhou, S. Pree, P. M. Bellan

[Rev. Sci. Instrum. 94, 013504 \(2023\)](#)

Generation and Characterization of Chaotic Convection in Collisional Plasma

J.P. Koulakis, S. Pree, and S. Putterman ,

[IEEE Trans Plasma Sci, vol. 48, no. 11, \(2020\)](#)

Acoustic self-oscillation in a spherical microwave plasma

S. Pree, S. Putterman, and J.P. Koulakis,

[Phys. Rev. E 100, 033204 \(2019\)](#)

Trapping of plasma enabled by pycnoclinic acoustic force

J.P. Koulakis, S. Pree, A.L.F Thornton, and S. Putterman,
[Phys. Rev. E 98, 043103 \(2018\)](#)

Acoustic resonances in gas-filled spherical bulb with parabolic temperature profile

J.P. Koulakis, S. Pree, and S. Putterman,
[J. Acoust. Soc. Am. 144, 2847 \(2018\)](#)

Simultaneous Ultra-Fast Imaging and Neutron Emission from a Compact Dense Plasma Focus Fusion Device

N. Majernik, S. Pree, Y. Sakai, B. Naranjo, S. Putterman, and J. Rosenzweig
[Instruments 2, 6 \(2018\)](#)

Observation of Shell Structure, Electronic Screening, and Energetic Limiting in Sparks

A. Bataller, S. Putterman, S. Pree, and J.P. Koulakis
[Phys. Rev. Lett. 117, 085001 \(2016\)](#)

Nanosecond high-power dense microplasma switch for visible light

A. Bataller, J.P. Koulakis, S. Pree, S. Putterman
[Appl. Phys. Lett. 105, 223501 \(2014\)](#)

Conference Papers, Presentations, and Posters

Acousto-convective relaxation oscillation in plasma lamp [Paper]

S. Pree, J.P. Koulakis, A.L.F. Thornton, and S. Putterman,
[Proc. Mtgs. Acoust. 34, 045015 \(2018\)](#)

Towards higher energy density processes in sonoluminescing bubbles [Paper]

S. Putterman and S. Pree, [Proc. Mtgs. Acoust. 34, 04501 \(2018\)](#)

Acoustic plasma trapping and plasma thermoacoustics [Presentation]

Virtually Given as the University of Mississippi Physics Colloquium (April 2020)

3D Thermoacoustics in a Microwave Plasma [Presentation]

S. Pree, J. P. Koulakis, S. Putterman,
<http://meetings.aps.org/Meeting/DFD19/Session/Q06.4>

Nonlinear Acoustics at the Air-Water Free Surface [Poster]

S. Pree, B. Naranjo, and S. Putterman
<http://meetings.aps.org/link/BAPS.2016.DFD.KP1.130> (2016)

Research and Professional Experience

Visiting Student of G. Courret at HEIG-VD, Yverdon-les-Bains, Switzerland	2017
Intern at Widetronix, Ithaca, NY	2012-2013
Intern at Radiabeam Technologies, Santa Monica, CA	2011-2012