

Abstract Submitted  
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**Magnetic Bubble Expansion Experimental Investigation Using a Compact Coaxial Magnetized Plasma Gun** YUE ZHANG, ALAN LYNN, University of New Mexico, SCOTT HSU, HUI LI, WEI LIU, Los Alamos National Laboratory, MARK GILMORE, CHRISTOPHER WATTS, University of New Mexico, UNIVERSITY OF NEW MEXICO COLLABORATION, LOS ALAMOS NATIONAL LABORATORY COLLABORATION — The poster will first discuss the construction and improved design of a compact coaxial magnetized plasma gun. The plasma gun is used for experimental studies of magnetic bubble expansion into a lower pressure background plasma, which as a model for extragalactic radio lobes and solar coronal mass ejections. In this experiment, the plasma bubble's density, electron temperature, and propagation speed are measured by using a multiple-tipped langmuir probe. Also a three axis B-dot probe array is used to measure the magnetic field in three dimensions during the expansion process. In this poster experiment setup and data will be provided. Finally the comparison with the simulation result will be made.

Yue Zhang  
University of New Mexico

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