J O U R N A L C L U B

Interrelated Experiments in Laboratory and Space Plasma Physics

by

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ABSTRACT

Many advances in understanding space plasma phenomena, such as plasma-wave generation and propagation, plasma acceleration, and magnetic reconnection have been linked to insight derived from theoretical modeling and/or laboratory experiments. This talk will review advances for which laboratory experiments played an important role and will describe how the interpretation of the space plasma data was influenced by one or more laboratory experiments. The space-motivation of laboratory investigations and the scaling of laboratory plasma parameters to space plasma conditions will be discussed. Examples demonstrating how laboratory experiments develop physical insight, benchmark theoretical models, discover unexpected behavior, establish observational signatures, and pioneer diagnostic methods for the space community will be presented. A primary object of the talk is to articulate the overlapping scientific issues that are addressable in space and lab experiments. A secondary objective is to convey the wide range of laboratory and space plasma experiments involved in this interdisciplinary alliance.

Friday, March 29
Elvey Bldg. Globe Room
3:45 pm