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Research Opportunities at the Basic Plasma Science Facility[1]

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The Basic Plasma Science Facility (BAPSF) at (UCLA) is a user facility sponsored by the Department of Energy and the National Science Foundation. The purpose is to provide access, free of charge, to qualified national and international scientists to a state-of-the art, large plasma device (LAPD) which, permits the exploration of frontier topics in plasma science under controlled conditions. Some of the research activities are related to space plasma investigations, others explore fundamental issues of interest to fusion research. The operation is centered on the LAPD device developed by the UCLA research team. The machine produces quiescent and reproducible plasma discharges having typical duration of 10 msec (t_{rep} = 1 Hz), accessible throughout the day. The plasma column is 18 meters in length and 60 cm in diameter. The magnetic field can be varied continuously up to 2.5 kG. Fully ionized discharges in He, Ar, and Ne are available. Representative parameters are: The machine has 360 access ports. Qualified users have access to all of the machine diagnostics. Each user group is assigned a staff scientist who runs the machine and provides the necessary technical expertise to implement their research project. To obtain access a prospective user contacts the director and then submits a white paper. Instructions for this can be found at http://plasma.physics.ucla.edu/bapsf. The white paper is reviewed by an external committee. There are currently 11 active projects. This talk will give details of the device and briefly describe some of the experiments in progress.

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