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Status of the Magnetized Dusty Plasma Experiment (MDPX)[1]
E. THOMAS, R. FISHER, S. LEBLANC, K. WOOD, D. ARTIS, U. KONOPKA, Auburn University, R.L. MERLINO, University of Iowa, M. ROSENBERG, University of California, San Diego — The Magnetized Dusty Plasma Experiment (MDPX) facility is a multi-user research project whose primary mission is to study the properties of a dusty plasma in which the magnetic force on the charged microparticles is comparable to the other confinement and inter-dust forces. The MDPX facility will be a flexible device with a range of experimental configurations. It will be capable of producing highly uniform magnetic fields above 4 T as well as operating in a variety of shaped magnetic geometries: from linear gradients up to 1 T/m to magnetic quadrupole configurations. The device uses an octagonal vacuum vessel design to maximize diagnostic access to the plasma. This presentation describes the current state of development of the MDPX facility as it advances towards its complete system integration by Summer, 2013. The presentation provides an overview of the final design of the superconducting magnet system, the updated design of the vacuum vessel, the plasma source, and the development of diagnostic systems.

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