Abstract Submitted
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Electromechanical Tests of a New Scanning Probe for Alcator C-Mod[1] NOAH SMICK, BRIAN LABOMBARD, MIT PSFC — The success of a recently installed magnetically-driven swing probe on the high-field side scrape-off layer in Alcator C-Mod[1] has prompted us to proceed with a second, more capable electromechanical probe. The new probe will plunge linearly into the plasma and will use four electrodes to provide temperature and density profiles and potential fluctuations as well as parallel and perpendicular Mach number with high spatial resolution up to the separatrix. This probe will be used to investigate in more detail the ballooning-like transport asymmetry and resultant strong plasma flows observed by the original probe. The electromechanical response of the new probe is presently being evaluated in a 4.5 tesla magnetic field. These tests will allow us to develop a model for the eddy currents and back-EMF that the device will experience in C-Mod. This work also allows us to evaluate the mechanical action and durability of the design. [1]N. Smick et al., J. Nucl. Materials **337-339** (2005) 281, N. Smick et al., Bull. Amer. Phys. Soc. **49** (2004) 74.

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