

Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

Disruption **Studies**
On C-MOD: Mitigation & Hydrogen/Deuterium Fuel Recovery¹ D.G.
WHYTE, M. BAKHTIARI, U. Wisconsin - Madison, R. GRANTEZ, V. IZZO, J.
TERRY, B. LIPSCHULTZ, PSFC M.I.T., T. JERNIGAN, ORNL — Due to its
high magnetic field, high plasma energy density and metallic first wall, the Alcator
C-Mod tokamak provides a critical testbed for developing and testing disruption
mitigation scenarios for ITER. We will report the first results using high-pressure
gas injection of noble gases into C-Mod. These results will be compared to previous
results from DIII-D, and possible implications for the penetration of gas jet impu-
rities in ITER will be discussed. We also report on the successful demonstration of
recovery of hydrogenic fuel by exploiting transient heating of the wall from planned
disruptions, a technique proposed for ITER. Disruptions are shown to be effective
at reducing the hydrogen/deuterium isotope ratio, as required for ion cyclotron H
minority heating. The routine use of disruptions was successful at preventing net
retention of fueled deuterium gas in the wall without detrimental effects to C-Mod
operation, and thus shows initial promise for reducing tritium retention in ITER.

¹Work supported by USDOE

Dennis Whyte
University of Wisconsin-Madison

Date submitted: 21 Jul 2005

Electronic form version 1.4