

Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Impurity Pellet Injector for Disruption Mitigation Studies in DIII-D¹ A.N. JAMES, E.M. HOLLMANN, J.H. YU, University of California-San Diego, T.E. EVANS, G.L. JACKSON, P.B. PARKS, General Atomics — The DIII-D impurity pellet injector, formerly lithium pellet injector, has been recommissioned primarily for the purpose of disruption mitigation experiments. The first pellet injected into a H-mode plasma was a solid 1 mm cylindrical carbon pellet which completely ablated in the pedestal and did not cause a disruption. More than 90% of carbon which reached the pedestal was assimilated into the core on a transport time scale of ~ 10 ms, roughly doubling plasma carbon content. We will report on planned experiments involving injection of low-Z shell pellets made of polystyrene which contain a dispersive payload of tracer material: boron dust in cylinders or 10 atm argon gas in spherical pellets. The goal in both cases being delivery of large quantities of electrons to the core before triggering a thermal quench. Another experiment to be reported involves injecting small carbon pellets during the current quench phase of a disruption to attempt probing the properties of runaway electrons.

¹Work supported by the US DOE under DE-FC02-04ER54698 and DE-FG02-07ER54917.

E.J. Strait
General Atomics

Date submitted: 17 Jul 2008

Electronic form version 1.4