

Abstract Submitted  
for the DPP10 Meeting of  
The American Physical Society

**Can Injected Lithium Granules Trigger ELMs?**<sup>1</sup> D.K. MANSFIELD, A.L. ROQUEMORE, H. KUGEL, PPPL, L.R. BAYLOR, R. MAINGI, ORNL, P. PARKS, G.A. — Coating plasma facing components (PFCs) with lithium has eliminated ELMs in NSTX H-mode plasmas. Improved ELM-free confinement, however, leads to accumulation of high-Z impurities and uncontrolled radiation losses. Further, injecting solid deuterium pellets in other devices is known to trigger ELMs at frequencies approximating the injection frequency. Hence, one can pose the question: “can lithium granules (i.e. small pellets) injected at high frequency also trigger ELMs in fusion devices?” Such a scheme might lead to the replacement of large amplitude Type-1 ELMs with small amplitude, high frequency (grassy) ELMs. These smaller ELMs would then reduce the power flux to PFCs (as compared to large ELMs) while *perhaps* simultaneously purging the core of accumulated impurities. Such a technology, moreover, would not require cryogenics. The physics of this concept will be explored.

<sup>1</sup>Work supported by USDOE Contract DE-AC02-09CH11466.

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Date submitted: 31 Aug 2010

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