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PD/P8-15: First Observations of ELM Triggering by Injected Lithium Granules in EAST

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Large transient events, including edge localized modes (ELMs), would be problematic for high power fusion devices, including ITER, because of the associated large, periodic heat loads on plasma facing components. Two methods to address this issue are elimination of large ELMs altogether with, e.g. 3-D magnetic perturbations, or controlled triggering of rapid, small ELMs for a manageable transient heat load. One proven method for ELM triggering involves injection of periodic, high-speed cryogenic deuterium pellets. The use of fuel pellets, however, introduces the prospect of increased plasma density; while recent research1 has nearly eliminated density increases, the flexibility to use pellet materials other than fuel is still desirable. In this paper, we report the first results of ELM pace-making with lithium granules accelerated

into H-mode discharges at the outer midplane in the EAST device, using a rotary motor to impel a controllable velocity, and hence a controllable penetration depth.

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