Abstract Submitted
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Superposition of dual shattered pellet injections for disruption mitigation[1] J.L. HERFINDAL, D. SHIRAKI, L.R. BAYLOR, ORNL, E.M. HOLLMANN, R.A. MOYER, UCSD, C.J. LASNIER, LLNL, N.W. EIDIETIS, GA — Experiments on DIII-D have injected multiple shattered pellets at different toroidal locations for the first time, as is planned for the ITER disruption mitigation system. Systematically varying the relative timing of the two pellets demonstrate that simultaneous pellets may mitigate less effectively than a single pellet injecting similar neon quantities. Thermal quench (TQ) radiation fractions measured near the injection are reduced with the dual pellets, possibly as a result of a more rapid shutdown due to a broader impurity distribution over multiple flux tubes. However, radiation measured away from the injection does not share this trend, indicating asymmetries may exist. Mitigation of current quench (CQ) loads is also similarly reduced in the dual pellet cases, consistent with the observed reduction in TQ mitigation. However, pellets entering the plasma after (or during) the TQ initiated by the other pellet, can still contribute to CQ mitigation.

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