

Abstract Submitted
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Attributes of argon pellet fast shutdowns in DIII-D¹ J.C. WESLEY, P.B. PARKS, T.E. EVANS, General Atomics — Observable spatial and temporal attributes of the initial phase (0-2 ms) of 140 fast plasma shutdowns effected with injection of small (2×10^{20} atoms) solid argon cryopellets into lower-single-null and inner-wall-limited “target” plasmas are surveyed and compared in detail using a database approach. Both the immediate injection effect and subsequent runaway electron (RE) generation are assessed. The resulting data correlations elucidate similarities and differences owed to target configuration and heating method and provide insight into the origins of both early RE generation and loss and subsequent development of RE current plateaus with initial magnitudes of up to 650 kA. Comparison with pellet ablation and RE generation models and implications for fast shutdowns effected in future high-avalanche-gain tokamaks will be discussed.

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