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Recent Physics Results from the DIII–D Disruption Program,[1] T.E. EVANS, P.L. TAYLOR, A.G. KELLMAN, M.J. SCHAFFER, A.W. HYATT, D.A. HUMPHREYS, R.L. LEE, P.B. PARKS, General Atomics, D.G. WHYTE, INRS–Energie et Materiaux, T.C. JERNIGAN, Oak Ridge National Laboratory, S. LUCKHARDT, J.W. CUTHBERTSON, J. ZHANG, University of California, San Diego, G.W. JAHNS, D. WROBLEWSKI, ORINCON — Recent disruption experiments on DIII–D have provided a variety of new characterization and mitigation data with which to better understand the physics of disruptive instabilities. Peak halo current amplitudes are reduced by up to 50% in triggered VDEs with both neon and argon "killer" pellets. Halo current toroidal peaking factors are also reduced from $\sim$ 3 to 1.1 for these discharges. Impurity radiation accounts for at least 90% of the thermal quench during "killer" pellet injection. Runaway electrons are generated on some neon "killer" pellet injection discharges but not others. Argon "killer" pellets typically generate more runaway electrons than neon. Runaway electrons are also seen during some negative central shear (NCS) disruptions. Results on the successful implementation of a real-time neural network used to predict the high beta disruption boundary will also be discussed.

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Todd E. Evans
evans@gav.gat.com
General Atomics

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