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[**X**] Theory [ ] Experiment

Modeling Fast Electron Acceleration and Confinement in MHD Simulations,* V.A. Izzo, *UCSD*, D.G. Whyte, R.S. Granetz, *MIT PSFC*, P.B Parks, *GA* – Simulations of disruptions and disruption mitigation have been carried out with the NIMROD code, and are ongoing. An unresolved issue for ITER is the problem of runaway electrons which may be subject to large avalanche amplification factors during the current quench. Two possibilities for avoiding large runaway current fractions are collisional suppression of runaway avalanching, and degraded fast electron confinement. The latter method relies on large MHD fluctuations persisting during the current quench, which can be explored with MHD simulations. A model for diagnosing fast electron acceleration and confinement has been implemented in NIMROD. The model is presented along with further development plans. Preliminary results of the model for massive gas injection simulations show prompt loss of fast electron populations in the thermal quench, which is seen in experiments. The effects of elongation on MHD fluctuation amplitudes during a mitigated disruption are also considered.

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