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Core Perturbations Caused by Edge-Localized Modes (ELMs) in DIII-D,* Abdullah Zafar, *North Carolina State University*; R.A. Moyer, E.M. Hollmann, *UCSD;* L. Zeng, *UCLA;* M.E. Austin, *UT-Austin* – The inward propagation of the perturbations caused by edge-localized modes (ELMs) is studied in DIII-D. ELMs are associated with peeling-ballooning modes in tokamaks, which have eigenfunctions that are localized to the edge and pedestal region, but the core density is seen to respond strongly to each ELM crash. Type-I ELMs are analyzed using various diagnostics (microwave reflectometry, electron cyclotron emission, and soft x-ray). Penetration deep into the core from an ELM crash is observed for type-I ELMs in certain cases. In these cases, the "hole" caused by an ELM crash propagates as far as the magnetic axis. The depth of the perturbation is compared to ELM size and the time in-between subsequent ELMs. The time scale that the perturbation is seen to travel in is also analyzed in relation to diffusive or ballistic transport.

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