Abstract Submitted
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The dependence of the H-mode pedestal height and width on plasma current[1] MORDECAI SEGALL, Yeshiva University, R. MAINGI, T.K. GRAY, ORNL, T. OSBORNE, GA, NSTX (PPPL) TEAM — The H-mode pedestal in divertor tokamaks is subject to periodic peeling and ballooning instabilities (Edge-Localized Modes, or ELMs) which discharge up to 20% of the total plasma energy into the scrape off layer and the divertor in a matter of milliseconds. Controlling the density, temperature, and pressure profiles in the pedestal is essential to preventing these potentially disastrous ELMs in tokamaks such as ITER. It is already known that some pedestal profiles are stable to ELMs while some are not. We use a kinetic equilibrium fitting algorithm to map multiple pedestal profiles from Thomson scattering and charge exchange and recombination spectroscopy (CHERS) data and create a set of composite profiles for NSTX. We fit these edge profiles to a (standard) modified hyperbolic tangent functional form. We plot the resulting pedestal fit parameters against plasma current, which is known to affect global discharge characteristics and pedestal profiles. We compare the dependencies of the pedestal height and also the global stored energy on plasma current

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