Abstract Submitted
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Study of the Bursting Behavior of Type-I ELM Filaments on KSTAR by 2-D ECE Imaging System[1] J. LEE, G.S. YUN, M.J. CHOI, W. LEE, H.K. PARK, Postech, J.H. LEE, National Fusion Research Institute, C.W. DOMIER, N.C. LUHMANN, JR., University of California, Davis, A.J.H. DONNÉ, FOM Institute of Plasma Physics, B. TOBIAS, Princeton Plasma Physics Laboratory, KSTAR TEAM — Edge Localized Modes (ELMs), repetitive relaxation of the excess pressure and/or current density at the edge of the H-mode plasmas, have been studied in 2-D during the 2010 KSTAR campaign using an electron cyclotron emission imaging (ECEI) diagnostics [1]. More comprehensive picture of type-I ELMs compared to the previous campaign has been obtained in 2011 and the complex crash dynamics of the ELM filaments have been investigated in more detail. The growth rate, the filament size, and the poloidal flow are compared between type-I ELMs and type-III ELMs. In particular, type-I ELMs are observed to involve larger change in the poloidal flow during the crash phase and have much longer transient phase ($\sim$ 10 ms), a critical stage characterized by an abrupt change in the poloidal mode number preceding the crash.

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