Abstract Submitted
for the DPP16 Meeting of
The American Physical Society

Critical aspects of ELM crash suppression by magnetic perturbations in KSTAR JAYHYUN KIM, Y.M. JEON, G.Y. PARK, M.J. CHOI, Y. IN, S.W. YOON, C. BAE, National Fusion Research Institute, J. LEE, Ulsan National Institute of Science and Technology, J.-K. PARK, Princeton Plasma Physics Laboratory, J. AHN, Oak Ridge National Laboratory, THE KSTAR TEAM TEAM — ELM crash suppressions have been achieved by low n (n =1, 2, and mixture of them) magnetic perturbations (MPs) with using various configurations of in-vessel perturbation coils in KSTAR [1][2]. So far, the suppressed periods are extended longer than 10 seconds. In KSTAR, the complete suppression of ELM crashes almost always accompany with the increase of edge fluctuations which are likely to be excited by applied MPs. The excitation of edge fluctuation exhibited the bifurcation-like feature depending on the strength of MPs. The conditions to excite edge fluctuations were investigated with including well known q_{95} window. On the other hand, ELM mitigation does not come with the increase of edge fluctuations. Instead, it seems that applied MPs directly trigger small frequent ELMs since the mitigated ELMs suddenly disappear when turning MPs off. The results stress the importance of stability analysis with the use of perturbed equilibrium since most stability studies have assumed unperturbed/undistorted equilibrium. [1] Y.M. Jeon *et al.*, Phys. Rev. Letters **109**, 035004 (2012). [2] J. Kim *et al.*, submitted to Nucl. Fusion.

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Date submitted: 15 Jul 2016 Electronic form version 1.4