ELM-like Oscillations Observed in the Large-Helical-Device Plasmas with/without L-H Transition

F. Watanabe[2], K. Toi[1,2], S. Ohdachi[1], S. Sakakibara[1], S. Morita[1], K. Narihara[1], Y. Narushima[1], T. Morisaki[1], C. Suzuki[1], K. Tanaka[1], T. Tokuzawa[1], K.Y. Watanabe[1], and LHD experimental group[1]

Email: fmtk-w@nifs.ac.jp

[1]*Department of Energy Engineering and Science, Nagoya University, Nagoya 464-8603, Japan*

[2]*National Institute for Fusion Science, Toki 509-5292, Japan*

In the Large Helical Device (LHD), bursts of edge MHD modes and edge localized mode (ELM)-like oscillations are typically observed in high beta L-mode plasmas without the L-H transition as well as H-mode plasmas with edge transport barrier (ETB) produced by the transition. This is a reason why the edge region in LHD is in magnetic hill and easily suffers from destabilization of ideal/resistive interchange modes. Amplitude of ELM-like activities tends to increase with the increase in the beta value $<\beta_{dia}>$ evaluated from diamagnetic measurement, in both H-mode with ETB and high beta L-mode. In this paper, characteristics of ELM-like oscillations and relationship with edge MHD modes are investigated for H-mode and L-mode plasma in the range of $1.5 \leq <\beta_{dia}> \leq 3\%$.