

Abstract Submitted
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Study of MHD spectroscopy by using RMP coils in small tokamak device HYBTOK-II¹ YOSHIHIDE SHIBATA, National Institute of Technology, Gifu College, MASAOKI OKAMOTO, National Institute of Technology, Ishikawa College, KIYOMASA WATANABE, National Institute for Fusion Science, NORIYASU OHNO, Nagoya University, GO MATSUNAGA, National Institutes for Quantum and Radiological Science and Technology, YUSUKE KIKUCHI, University of Hyogo — Stability analysis of MHD mode is necessary to investigate the stability state of MHD instabilities. The accurate plasma parameter profiles are important for stability analysis. However, it is hard to evaluate these parameters during the plasma discharge, and a real-time evaluation of stability analysis of MHD mode is impossible. MHD spectroscopy, measurement of a frequency response of MHD instability on the external RMP fields, is useful information to investigate the stability of MHD mode in experiment. The stability of MHD mode can be estimated from a damping rate without a stability analysis. In this study, plasma responses and plasma parameters around a resonant surface is investigated during MHD spectroscopy by using the internal plasma measurement in HYBTOK-II. Plasma current ramp-up experiment (6-10kA) was carried out for MHD spectroscopy. A radial magnetic fluctuation (Br) outside the plasma synchronized with coil current of RMP was measured by a lock-in amplifier. Br in ramp-up exp. was increased with the decrease of the safety factor at the plasma edge. It is considered that increase of the plasma response is generated by the reaction between MHD instability in plasma and RMP. In the presentation, we will show detail analyzed data of MHD spectroscopy.

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