

Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Drift Wave Turbulence in Helicon High-Density Linear Plasma III: Multi-Probe Measurements¹ K. TERASAKA, S. SHINOHARA, Y. NAGASHIMA, M. KAWAGUCHI, T. YAMADA, T. MARUTA, Y. KAWAI, M. YAGI, S.-I. ITHO, Kyushu Univ., Japan, K. ITHO, NIFS, Japan — Plasma turbulence excited by drift waves and the associated formation and the transport processes have been investigated in many torus and linear devices. In these objectives, high-density (up to 10^{19} m^{-3}) helicon plasma was generated in new Large Mirror Device (LMD) with 370cm axial length and 45 cm inner diameter, where the wave with a peak frequency of 3-5 kHz was obtained in the strong area in density gradient. In order to examine the structure of this drift wave in more detail, we introduced a developed probe system, using an azimuthal multi probe array (48ch-probe) to measure the poloidal k - ω spectrum. The 48ch-probe consists of 16 units with 3 tungsten electrodes (ϕ 0.8 mm, L 4 mm), and when located at $r = 4$ cm, it aligned at an azimuthal interval at 5.2 mm, at the axial position of $z = 162.5$ cm. Since each unit is movable in the radial direction, it can also measure the space structure. Here, the ion saturation current or the floating potential can be stored by the fast data sampling logger system (1 μ sec sampling). Other types of probes such as 2-dimensional moving probe and another set of 64ch-probe will be also tested.

¹This work was partly supported by the Grant-in-Aid for Specially-Promoted Research (16002005) of MEXT, Japan.

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Date submitted: 26 Jul 2006

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