

Abstract Submitted
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Measurement of the ICRF wave propagation in the internal region of plasmas by using reflectometers on GAMMA10¹ T. OKADA, R. IKEZOE, M. ICHIMURA, M. HIRATA, M. SAKAMOTO, S. SUMIDA, Y. IWAMOTO, S. JANG, J. ITAGAKI, Y. ONODERA, M. YOSHIKAWA, J. KOHAGURA, Y. SHIMA, Y. NAKASHIMA, Plasma Research Center, University of Tsukuba — ICRF waves is one of valuable tools for producing and heating plasmas. On GAMMA10, ions are mainly heated by the ICRF waves with the absorption of the cyclotron resonance layers. ICRF waves of 6.36, 9.9 and 10.3 MHz are normally used to be compatible with the magnetic mirror configuration and damped at the resonance layers of the central cell, east and west anchor cells, respectively. These waves are usually excited by ICRF antennas installed in the central cell and propagate to each resonance layer. It is essential for the ongoing divertor simulation experiments on GAMMA 10 to investigate wave excitation, propagation and absorption. We observe the electron density fluctuations accompanied with the ICRF waves by using microwave reflectometer systems. It is confirmed that the wave of 6.36 MHz is further damped near the resonance layer in the internal region. The waves of 9.9 / 10.3 MHz excited in the east / west anchor cells interferes with the wave from the central cell. The interfered wave is controlled with antenna phasing by the phase difference between both antennas in the central and the anchor cell. The wave intensity measured by reflectometers depends clearly on the phase difference. In this talk, the availability of wave measurement with reflectometers is shown, and the wave propagation in the internal region of plasmas on GAMMA 10 is reported.

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