

Abstract Submitted
for the GEC07 Meeting of
The American Physical Society

Space- and Time-Resolved E-H Transition by using ICCD Camera in an Inductively Coupled Plasma in Ar SATOSHI HIRAO, YUICHIRO HAYASHI, TOSHIKI MAKABE, Keio University — Inductively coupled plasma (ICP) has been widely used as a high density plasma source in various applications. ICP has two operating modes. One is a low density (capacitively coupled) E- mode sustained by the static electric field between terminals of the induction coil. The other is a high-density (inductively coupled) H-mode sustained by the induced electromagnetic field. It is well known that there is an E-H transition in ICP, however the details of this phenomenon are not well-known. In our previous work, we experimentally studied the ICP in Ar by using ICCD camera located at the side of the reactor, and observed the E-H transition by the line-integrated time-resolved emission images. In the present study, we set the ICCD camera on the top of the reactor to measure the 2D-t plasma structure at the coil plane. We mainly focus on the emission from Ar(2p1) as a probe of high energy electrons, and discuss the behavior of plasma during E-H transition.

Satoshi Hirao
Keio University

Date submitted: 14 Jun 2007

Electronic form version 1.4