Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Modeling of ICRF Heating Scenarios for the EAST Tokamak[1]
XINJUN ZHANG, YANPING ZHAO, JIANGANG LI, BAONIAN WAN, Institute of Plasma Physics, Chinese Academy of Sciences, P.T. BONOLI, Y. LIN, A. PARISOT, J.C. WRIGHT, S.J. WUKITCH, MIT Plasma Science and Fusion Center
— Experimental Advanced Superconducting Tokamak (EAST) is a fully superconducting tokamak (R = 1.7 m, a = 0.4m, Bt = 3.5T, pulse length <= 1000 sec) being commissioned at ASIPP. Radio frequency (RF) power in the ion cyclotron range of frequencies (ICRF) will be one of the primary auxiliary heating techniques for EAST. The ICRF system will provide more than 6 MW power coupled to the plasma in the frequency range of 30 - 110 MHz. Two actively cooled 2-strap antennas are being developed. In this modeling study, three physics scenarios are considered: (a) Fast Wave (FW) minority heating; (b) FW mode conversion electron heating; (c) FW mode conversion current drive. The simulations are carried out using a parallel version of TORIC, a finite Larmor radius ICRF code, on the Marshall cluster at MIT.

[1]Work supported by Chinese Academy of Sciences and US DoE Coop. Agreement No. DE-FC02-99ER54512.

Xinjun Zhang

Date submitted: 07 Sep 2006 Electronic form version 1.4