Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

RF Experiments on TST-2 YUICHI TAKASE, AKIRA EJIRI, YOSHIHIKO NAGASHIMA, OSAMU WATANABE, University of Tokyo, BUNG IL AN, MIT, KENTARO HANASHIMA, HIROYUKI HAYASHI, JUNICHI HIRATSUKA, HIDETOSHI KAKUDA, HIROAKI KOBAYASHI, HIROKI KURASHINA, HAZUKI MATSUZAWA, TAKUYA OOSAKO, TAKUYA SAKAMOTO, TAKUMA WAKATSUKI, KOTARO YAMADA, TAKASHI YAMAGUCHI, University of Tokyo, PAUL BONOLI, JOHN WRIGHT, MIT — RF experiments were performed on the TST-2 spherical tokamak (R= 0.38 m, a = 0.25 m, B_t = 0.3 T, I_p = 0.1 MA) with up to 5 kW of power at 2.45 GHz and up to 400 kW of power at 21 MHz. In HHFW electron heating of inductively produced plasmas, parametric decay instability was often observed. The spatial distribution measured by RF magnetic probes located at different toroidal locations indicated wave propagation effects as well as nonlinear effects. Spontaneous formation of the ST configuration was studied. Sustainment of the ST configuration was accomplished by low frequency (21 MHz) RF power alone for the first time. LHCD and I_p ramp-up experiments are in preparation using up to 400 kW of power at 200 MHz. This experiment will be carried out at B_t = 0.3 T, and the density of the EC produced plasma will be kept low during I_p ramp-up by LHCD. Status of preparation and results of calculations will be presented.

Yuichi Takase
University of Tokyo

Date submitted: 16 Jul 2009 Electronic form version 1.4