Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Development progress of plasma shaping controls in KSTAR
SANG-HEE HAHN, National Fusion Research Institute, N.W. EIDIETIS, General Atomics, D. MUELLER, Princeton Plasma Physics Laboratory, Y.M. JEON, S.W. YOON, J.H. KIM, S.Y. PARK, National Fusion Research Institute, M.L. WALKER, General Atomics, KSTAR TEAM — An axisymmetric magnetic shape control system has been developed for creations and sustainment of double-null diverted shape of KSTAR, based on the real-time EFIT/isoflux algorithm. The real-time EFIT scheme is modified to deal with the influences of magnetic materials inside the magnet system. On the design of the isoflux algorithm, various techniques were used in order to decouple the coil responses by the shape changes from the plasma current feedback responses. In this work, we show experimental application results of the developed controls on the KSTAR at the 2011 plasma campaign, and analyze the effects of shaping on the plasma performances.

Sang-hee Hahn
National Fusion Research Institute

Date submitted: 29 Jul 2011 Electronic form version 1.4