

Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

The IGNITOR ICRF system
VOLODYMYR KYRYTSYA, RICCARDO MAGGIORA, VITO LANCELLOTTI,
DANIELE MILANESIO, GIUSEPPE VECCHI, Politecnico di Torino, Italy — A
flexible auxiliary Ion Cyclotron Resonance Heating (ICRH) system ($f = 80 - 120$
MHz) has been included in the IGNITOR machine design. ICRH systems have been
successfully tested on a number of existing devices especially at high density. Igni-
tion can be accelerated significantly by relatively low levels of ICRH (about 5 MW,
a fraction of the final fusion heating) when applied during the current ramp-up. In
addition, ICRH provides a useful tool to control the evolution of the current density
profile. Four antennas, each composed by 2 straps, 4 tuning stubs, and 2 generators
each, can deliver a minimum RF power of about 12 MW for the entire adopted
frequency range. The possibility of adding two more antennas has been considered.
The antenna design has been based on performance evaluation obtained with the
TOPICA© simulation suite (Torino Polytechnic Ion Cyclotron Antenna code).

Giuseppe Vecchi
Politecnico di Torino

Date submitted: 22 Jul 2006

Electronic form version 1.4