

Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Initial Operation of the ITER-Like Ion Cyclotron Antenna in JET¹ R.H. GOULDING, F.W. BAITY, J. CAUGHMAN, D.A. RASMUSSEN, ORNL, F. DURODIÉ, S. HUYGEN, E. LERCHE, J. ONGENA, D. VAN EESTER, M. VRANCKEN, ERM/KMS Brussels, T. BLACKMAN, P. JACQUET, M. NIGHTINGALE, UKAEA, A. ARGOUARCH, CEA Cadarache — The JET ITER-Like Ion Cyclotron Antenna (ILA) has been installed in JET and commissioning on plasma is underway. The antenna is a two toroidal by four poloidal strap array configured in four pairs fed in a “conjugate-tee” arrangement utilizing internal pre-matching capacitors, strongly limiting the VSWR rise caused by increases in loading due to ELMs. The use of several poloidal straps to minimize the voltage close to the plasma and an “ELM resilient” feed circuit are design features shared with the ITER ion cyclotron antenna, and operating experience gained with the JET antenna will be of great importance for maximizing ITER antenna performance. To date the antenna has been successfully matched under feedback control into varying plasma loads, and has been operated in an H-mode plasma at a maximum capacitor voltage of 38 kV. We will review antenna commissioning results in the areas of power handling, plasma loading, matching behavior, and performance of arc protection systems.

¹Oak Ridge National Laboratory, managed by UT-Battelle, LLC, for the U.S. Dept. of Energy under contract DE-AC05-00OR22725.

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Date submitted: 22 Jul 2008

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