Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Electron Cyclotron Emission Diagnostics on ITER[1] RICHARD ELLIS, University of Maryland, MAX AUSTIN, PERRY PHILLIPS, WILLIAM ROWAN, JOSEPH BENO, ABELHAMID AUROUA, University of Texas, RUSSELL FEDER, ASHISH PATEL, PPPL, AMANDA HUBBARD, PSFC MIT, HITESH PANDYA, IPR India — Electron cyclotron emission (ECE) will be employed on ITER to measure the radial profile of electron temperature and non thermal features of the electron distribution as well as measurements of ELMs, magnetic islands, high frequency instabilities, and turbulence. There are two quasioptical systems, designed with Gaussian beam analysis. One view is radial, primarily for temperature profile measurement, the other views at a small angle to radial for measuring non-thermal emission. Radiation is conducted to by a long corrugated waveguide to a multichannel Michelson interferometer which provides wide wavelength coverage but limited time response as well as two microwave radiometers which cover the fundamental and second harmonic ECE and provide excellent time response. Measurements will be made in both X and O mode. In-situ calibration is provided by a novel hot calibration source. We discuss spatial resolution and the implications for physics studies.

[1]Supported by the U.S.-IPO, ITER Organization, and the USDoE.

Richard Ellis
University of Maryland

Date submitted: 15 Jul 2010 Electronic form version 1.4