

Passive and Active Investigation of Fluctuations in the Alcator C-Mod Divertor Region - D. L. Winslow and B. LaBombard

Langmuir probes in the Alcator C-Mod divertor region are being used to investigate turbulent fluctuations by both passive and active means. The passive experiments utilize high speed digitization on both the inboard and outboard Divertor surfaces, in the SOL and the private region, to determine dependence of turbulent spectra on plasma conditions, i.e. H-mode versus L-mode versus Ohmic operation. In addition, the viability of turbulent particle flux measurements using divertor probes is evaluated. All of these passive experiments will complement a similar set of measurements to be made in the C-Mod SOL using scanning probes. Active experiments using a tile probe to drive fixed-frequency sinusoidal electron currents and scanning probes to detect the driven current are planned for the next campaign. This will provide a mapping of the magnetic field between the divertor and SOL, allowing the direct comparison of divertor fluctuations with SOL fluctuations and determining parallel characteristics (wavenumber, correlation length, propagation direction) of the turbulence.