

ABSTRACT

Tokamaks are, in many respects, the most promising avenue for the development of fusion power. The continual improvement in the performance of these devices and our understanding of them is due in great measure to the development of accurate plasma diagnostics. Many of the most crucial measurements required to assess our progress on these experiments are based in one way or another upon collisional interactions of injected neutral beams with the plasma. These measurements include such fundamental parameters as the ion temperature, rotation, and density profiles, electric and magnetic field structure, and local studies of the plasma turbulent transport. Maximizing the obtained information for a given geometry of plasma, beams, and possible viewchords represents an interesting challenge to the experimentalist. Advances in detector and analysis techniques allow us to take full advantage of the beam/plasma emission for these measurements.