CUTOFF PROBE DIAGNOSTIC FOR PRECISE MEASUREMENT OF ELECTRON DENSITY*

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In this contribution we present the physics behind the cut off probe and discuss recent advancements for the practical implementation of this diagnostic technique in industrial settings.

Introduced a decade ago as a precise technique for the measurement of the local plasma density in low pressure discharges, recent experimental and computational studies have advanced our understanding on the origin and interpretation of the measured electromagnetic spectrum.

Amplitude and phase measurements, probe sensibility, operation in collisional regimes, probe geometry, sheath effects and chamber resonances have been investigated extensively recently and here we summarize the most significant findings1-4.

Based on recent developments we also introduce a novel methodology to interpret the probe spectrum that eliminates the sheath and collisional effects and enables the use of this precise diagnostic technique in a broad range of practical processing conditions.


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