Summary slide

Title: - Effect of the Controlled Density Gradient on Equilibrium and Confinement in a Simple Toroidal Device with two plasma sources

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- The presence of gradients in plasma properties provides free energy sources for various instabilities and transport.
- An experimental study has been performed to control the nature of fluctuation by controlling the density gradient using two different sources in a simple magnetized torus (SMT) by varying the toroidal field topology.
- First low dense plasma has been produced using the thermionic emission of a 1 mm thick, 20 cm long tungsten filament.
- After that Microwave of frequency 2.45 GHz, with launched power of around 1 kW, launched in "X" mode from the outboard side of the vacuum vessel.
- For the duration Microwave is present, the overall plasma density increases and moreover, the gradient of the density profile changes significantly.
- Spectrogram clearly shows that in the presence of Microwave a mode of frequency around 1.5 kHz is generated and as soon as Microwave turned off mode diminishes.
- Therefore, it confirms that using two different sources in tandem, one can control the gradient of plasma density and hence nature of fluctuations.