

Seminar

Institute for Plasma Research

- Title:** Simulation Investigation of a View Dump for Vertical Electron Cyclotron Emission (VECE) Diagnostic System.
- Speaker:** Dr. Prabhakar Tripathi (PDF)
Institute for Plasma Research, Gandhinagar
- Date:** 05th April 2023 (Wednesday)
- Time:** 10:30 AM
- Venue:** Seminar Hall, IPR

Abstract:-

Polarized Electron Cyclotron Emission (ECE) measurements can provide valuable information about the electron velocity distribution and its evolution. ECE, when measured vertically along a constant magnetic field path has the potential to determine sensitive information about the energy distribution of electrons present in a tokamak. These measurements can be eroded by multiple wall reflections from inside the tokamak chamber. To avoid these spurious infiltrations, a view dump is placed, residing at the opposite end of the receiving antenna. The design of the view dump ensures absorption of unwanted thermal radiation.

The talk will deals with the preliminary simulation investigations of a view dump using CST Microwave Studio in the frequency range of 60-110 GHz which covers the fundamental and 2nd harmonic cyclotron emission emissions at 1.5 Tesla, for SST-I Tokamak. The analysis includes investigation of various materials suitable for view dump design, followed by extensive simulation studies of various design geometries that improve the absorption capabilities of the materials.

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