

# Seminar

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## Institute for Plasma Research

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**Title :** Exploration of Propagation Window for Ion Acoustic Wave in MPD

**Speaker:** Dr. Meenakshee Sharma  
Institute for Plasma Research, Gandhinagar

**Date :** 31<sup>st</sup> May 2022 (Tuesday)

**Time :** 10.30 AM

**Venue :** Online - Join the talk:

[https://lobby.ipr.res.in/PDFextensiontalk\\_Meenakshee](https://lobby.ipr.res.in/PDFextensiontalk_Meenakshee)

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### **Abstract :**

The Multi-pole line cusp Plasma Device (MPD) has adopted cusp magnetic field geometry for plasma confinement, produced using six electromagnets. Electromagnets facilitate the confinement of plasma with a wide range of magnetic field strength. The plasma confined by these electromagnets can be micro-controlled using those magnets.

The Ion Acoustic (IA) wave is excited in the field free region of cusp magnetic field, where the ions are unmagnetized, while the electrons are magnetized beyond some values in the cusp region. The cusp magnetic field confines the hot energy electrons by mirror effect. Hence, the variation in cusp magnetic field strength gives us the opportunity to explore the regime for propagation of IA wave.

An experimental study of Ion Acoustic (IA) wave propagation is performed to explore the regime where IA wave can propagate. The limitations to IA wave and possible causes to make the wave damp in plasma are investigated. This experimental study is performed by changing the various plasma parameters, like plasma density, electron temperature, neutral density, and cusp magnetic field strength and results will be presented in this talk.

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