

# Seminar

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## Institute for Plasma Research

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**Title :** Experimental studies on Geodesic Acoustic Mode (GAM) and RMP effect in the STOR-M Tokamak

**Speaker :** Dr. Debjyoti Basu  
Saha Institute of Nuclear Physics, Kolkata

**Date :** 18th December 2017 (Monday)

**Time :** 03.30 PM

**Venue :** Committee Room 3, (New Building), IPR

### **Abstract :**

The Saskatchewan Tours Modified (STOR-M) is a small, limiter based, Ohmic heating Tokamak, having circular cross-section with major and minor radii 46 cm and 12 cm respectively. Recently, detailed experimental studies on Geodesic Acoustic Mode (GAM) have been performed as well as online turbulent feedback experiment has been initiated in this tokamak. A pulsed type AC power amplifier having output 50V, 2KWatt, 1 KHz-100 KHz has been developed for online feedback experiment. On the other hand, experimental outcomes of GAM study show that a new kind of quasi-coherent mode exists here. It is featured with a clear solitary peak around 30-35 kHz in the power spectra of the ion saturation current  $I_{\text{sat}}$  of Langmuir probe as well as poloidal and toroidal mode numbers ( $m=1, n=0$ ) as per prediction of conventional GAM theory. The dispersion relation of the mode is also similar to GAM and it also shows collisional damping. In contrast to conventional GAM, the floating potential  $\phi$  of the observed GAM-like mode does not show similar symmetric poloidal and toroidal mode numbers ( $m=0, n=0$ ), but has ( $m=1, n=1$ ). The GAM-like mode has also a pronounced magnetic component with mixed poloidal modes ( $m=3$  and  $m=5; n=1$ ), as observed by Mirnov coils. This mode is suppressed by the application of Resonance Magnetic Perturbations (RMP). All those results will be presented.

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