

## **Internal Seminar**

### **Saw tooth Crash Induced Heat Pulse Propagation in the ADITYA Tokamak**

**Sharvil Patel**

**PDEU, Gandhinagar**

The tokamak device uses a magnetic field to confine the high-temperature plasma, aiming to generate net fusion energy output. To achieve self-sustained fusion reactions, heat loss from high-temperature plasma must be minimized, and therefore the study of heat transport becomes important. In ADITYA plasma discharges, each saw tooth crash deposits heat beyond the inversion radius and gets rapidly transported to the plasma peripheral region. The estimated transient electron heat pulse diffusivity is found to be ten times higher than the steady-state heat diffusivity. The study finds that the significant discrepancy between transient and steady-state electron heat diffusivity is attributed to the enhanced electron heat diffusivity due to magnetic field stochastization and turbulence in the intermediate region.

***Tuesday, Aug 20<sup>th</sup> 2024***

***14:30 Hrs***

***CR-1, TIFR-H***