



भारतीय ताराभौतिकी संस्थान
INDIAN INSTITUTE OF ASTROPHYSICS
कोरमंगला Koramangala, बेंगलूरु Bengaluru – 560034.

स्नातक अध्ययन मंडल **Board of Graduate Studies.**

Ph.D Synopsis Seminar

Speaker: Harsh Mathur

शीर्षक **Title:** Probing chromospheric magnetic field using simultaneous multi-line spectropolarimetry

सार Abstract

Understanding the magnetic coupling between the chromosphere and the solar atmospheric layers is crucial in understanding the mechanisms that drive energy and mass transfer to the corona and solar wind. In this context, multiline spectropolarimetry is a powerful observational technique, allowing for simultaneous inference of magnetic fields at various heights in the solar atmosphere. In this presentation, we will discuss our observational efforts to explore the diagnostic potential of the H α line for probing the chromospheric magnetic field together with Ca II 8542 Å and Ca II 8662 Å lines. To carry out simultaneous multi-line spectropolarimetric observations, we have upgraded the Kodaikanal Tower Tunnel Telescope to record three spectral lines simultaneously. Additionally, we will discuss the development and installation of an image stabilization system, incorporating a tip-tilt and autoguider system, designed to effectively reduce seeing-induced spatial and spectral smearing of the polarimetric signal for an extended duration of approximately one hour. We used this enhanced setup to conduct simultaneous spectropolarimetric scans in the H α and Ca II 8662 Å lines of large sunspots seen between 19th May and 3rd June 2023. We will discuss the initial results on the magnetic field measurements obtained during this period.

मंगलवार Tuesday 1, अगस्त August 2023

Venue: प्रेक्षागृह Auditorium

Time: 4:00 PM

सभी का स्वागत है All are welcome.