



भारतीय ताराभौतिकी संस्थान
INDIAN INSTITUTE OF ASTROPHYSICS
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स्नातक अध्ययन मंडल Board of Graduate Studies

IIA - CU - PhD (Tech) Public Ph.D viva-voce examination

वक्ता **Speaker:** Hemanth Pruthvi

शीर्षक Title: DESIGN AND DEVELOPMENT OF CHROMOSPHERIC VECTOR MAGNETOGRAPH
FOR SUNSPOT STUDIES

सार Abstract

Solar atmosphere is permeated with magnetic fields of various spatial scales that exhibit dynamics in various temporal scales. Study of so-called active regions and their magnetic field measurements are of paramount importance in understanding the solar atmospheric dynamics and energetic events. Unique conditions offered by chromosphere such as being close to force-free state facilitate better modeling of solar magnetic fields with chromospheric magnetic field measurements. In this context, the instrumentation aspects of Solar Scanning Polarimeter (SSP) that has been installed at Kodaikanal Tower-tunnel Telescope of Kodaikanal Solar Observatory are presented. SSP measures the active region magnetic fields at chromospheric level, using spectropolarimetry and Zeeman diagnostics of Ca II 8542 Å spectral line. Polarimetric accuracy and sensitivity are estimated to be few times 10⁻² and 10⁻³ respectively. Design, development and testing of Image Stabilization System (ISS) are described. Its development is aimed to reduce image motion induced due to telescope system and seeing. Closed loop correction bandwidth of 110 Hz is achieved. A pilot study of correlation between observed chromospheric magnetic field and modeled chromospheric magnetic field (obtained from potential extrapolation using photospheric magnetograms) in the active regions is also presented.

मंगलवार Tuesday 15, दिसंबर December 2020

Time: 3:00PM

Remotely online

सभी का स्वागत है All are welcome

Join Zoom Meeting

<https://us02web.zoom.us/j/84062642238?pwd=bUh3WHd2cXlpTzVsN3dSRDBuaGYzQT09>

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