भारतीय खगोलभौतिकी संस्थान
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स्नातक अध्ययन मंडल **Board of Graduate Studies.**

Visiting Student's Programme Seminar

Title: A Computational Framework for Magnetic Feature Tracking in the Quiet Sun using SO/PHI Data

Speaker: Mr. Divyanshu Kumar
(MSc - NIT Meghalaya)

सार Abstract

The quiet Sun hosts numerous small-scale magnetic features whose evolution provides key insights into solar surface dynamics and magneto-convection. In this study, we present a computational framework for tracking and analyzing these magnetic features using high-resolution SO/PHI data from Solar Orbiter. Our C++-based pipeline integrates data preprocessing, 3D magnetic substructure identification, morphological dilation, and statistical filtering. The framework enables reliable extraction of metrics such as feature lifetimes, area, flux distribution, and interaction types. The results show strong agreement with known statistical trends and demonstrate the framework's potential for advancing quiet-Sun magnetic field studies.

सोमवार Monday 21, जुलाई July 2025

Time: 11:00 AM

प्रेक्षागृह Auditorium

सभी का स्वागत है All are welcome.