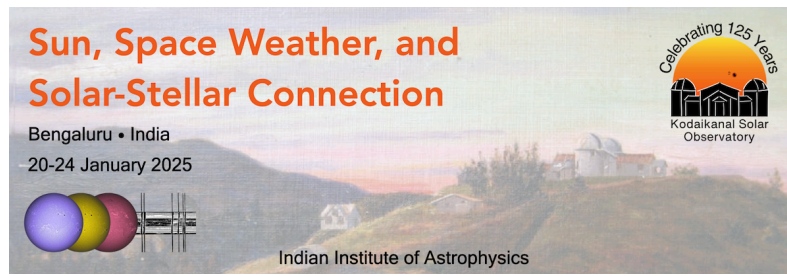


Sun, Space Weather, and Solar-Stellar Connection



Contribution ID: 22

Type: **Contributed talk**

Shock Wave Propagation in the Solar Atmosphere

Tuesday, January 21, 2025 3:10 PM (15 minutes)

The chromosphere exhibits various acoustic waves that are generated in the photosphere or deeper layers due to convective motions. As these waves encounter the steep density gradient between the photosphere and the chromosphere, they transform into shock waves, often characterized by a sawtooth pattern in λ -time plots of chromospheric spectral lines, such as H α and Ca II. In this study, we investigate the formation and propagation of these shock waves in the chromosphere, examining their implications in the higher solar atmosphere using observations from the Multi Application Solar Telescope (MAST), the Swedish 1-meter Solar Telescope (SST), the Interface Region Imaging Spectrograph (IRIS), and the Solar Dynamics Observatory (SDO). Our results show that these shock waves are predominantly observed in or near magnetic flux concentration regions and can propagate at least up to the transition region. In this talk, I will discuss the identification of these shock waves, their propagation characteristics, and their potential implications in coronal dynamics.

Contribution Type

Theme

Solar Magnetism in High-Resolution

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Session Classification: Waves in the Solar Atmosphere