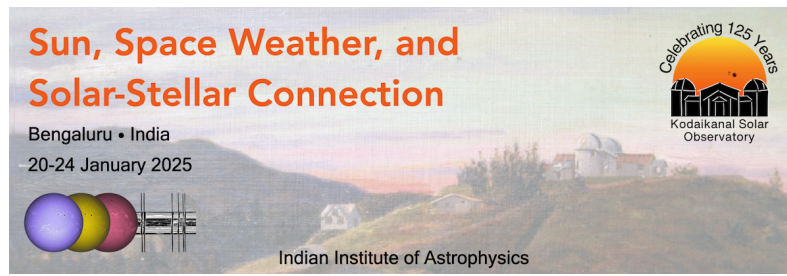


# Sun, Space Weather, and Solar-Stellar Connection



Contribution ID: 65

Type: **Invited review talk**

## Exploring Wave Coupling and Energy Dissipation in the Solar Atmosphere

*Tuesday, January 21, 2025 2:40 PM (25 minutes)*

The solar atmosphere is now understood as a fully interconnected system, where dynamic events in one layer may be the cause or effect of those occurring in the layers above. Photospheric flows, through interactions with magnetic structures, facilitate energy transfer to the chromosphere and beyond, often in the form of waves. These processes depend on frequency, with evidence suggesting that the high-frequency part of the spectrum plays a key role in energizing the solar atmosphere. However, probing high frequencies presents challenges for both instrumentation and modeling. On the modeling side, new physical aspects, such as the interaction between neutrals and plasma, are being incorporated. In this talk, I will review recent advances in theoretical studies of high-frequency waves, shocks, and vorticity propagation through the solar atmosphere, with a focus on multi-fluid modeling of these dynamic phenomena.

### Contribution Type

#### Theme

Solar Magnetism in High-Resolution

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**Session Classification:** Waves in the Solar Atmosphere