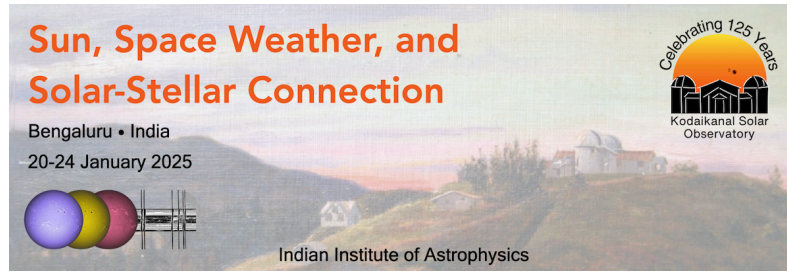


## Sun, Space Weather, and Solar-Stellar Connection



Contribution ID: 170

Type: **Invited talk**

# Inertial Waves in the Solar Convection Zone

*Monday, January 20, 2025 11:55 AM (20 minutes)*

The past several years have seen a dizzying array of both modeled and observed inertial oscillations in the solar convection zone. While classical Rossby waves are relatively well understood, the recently observed high-frequency retrograde vorticity (HFR) modes lack a convincing theoretical explanation. There have also been several different types of retrograde inertial waves that have been modeled but not observed. Here, we present a 3D numerical simulation in spherical geometry that models the Sun's convection zone and upper radiative interior. This model features many of these inertial oscillations and will provide a good overview of the current landscape. We additionally demonstrate that every inertial oscillation present in the model that is not a classical Rossby wave is part of the same family of mixed modes, greatly simplifying the theoretical picture.

## Contribution Type

## Theme

Solar Magnetism over Long-Time Scales

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**Session Classification:** Solar Interior Dynamics