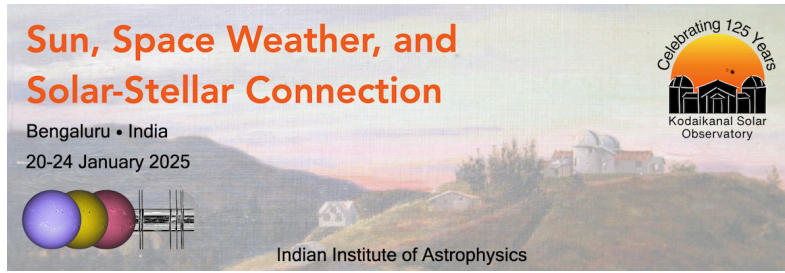


## Sun, Space Weather, and Solar-Stellar Connection



Contribution ID: 171

Type: **Invited talk**

# Reconciling Helioseismic Measurements of Solar Deep Meridional Flow from SDO/HMI and GONG Observations

*Monday, January 20, 2025 4:55 PM (20 minutes)*

The Sun's meridional circulation is crucial to understanding its dynamo and interior dynamics. However, helioseismic determination of deep solar meridional flows is complicated by multiple systematic effects, leading to inconsistent results in previous studies. To find the cause of the discrepancies, we collect measurement codes from multiple previous studies and analyze over 13 years of HMI and GONG data. We conduct a comprehensive comparison across different methods, data sources, and data preparation procedures, and analyze the multiple systematic effects in measurements by HMI and GONG. A systematic GONG-HMI offset in the North-South direction is confirmed. No discrepancies are found among independent measurements by multiple authors. After correcting for known systematic effects, the meridional-flow signals are consistent between GONG and HMI.

## Contribution Type

### Theme

Solar Magnetism over Long-Time Scales

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**Session Classification:** Solar Cycle Variations in the Interior