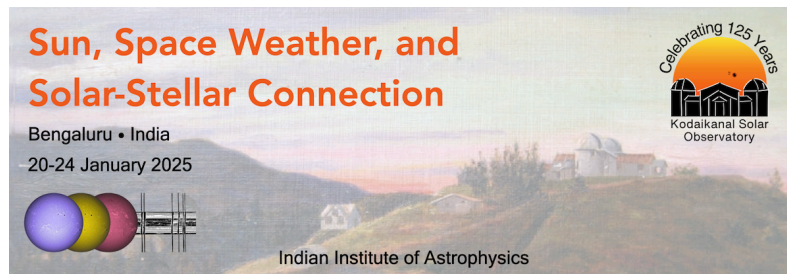


Sun, Space Weather, and Solar-Stellar Connection



Contribution ID: 33

Type: **Contributed talk**

Characteristics of Supergranulation Network from Kodaikanal Archival Data

Monday, January 20, 2025 10:30 AM (15 minutes)

The large-scale convection in the sun, supergranulation, is manifested as a network structure on the solar surface. The network cells have an average lifetime of 24 hours, a size of about 30 Mm, and a lane width of about 6 Mm. We have obtained the lane widths and intensities of the network as functions of latitude and time from the Ca II K spectroheliograms of the 100-year Kodaikanal archival data. We studied the spatial and temporal variations of these parameters which give important information on the flux transport on the solar surface. Also, the lane widths and intensities are found to be dependent on the sunspot cycle. The correlation between lane widths and sunspot number is used as a prediction tool for the latter. The results have implications for solar dynamo models and space weather predictions.

Contribution Type

Theme

Solar Magnetism over Long-Time Scales

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Session Classification: Long Term Synoptic Observations