

Session H8:

Solar Subsurface Flows

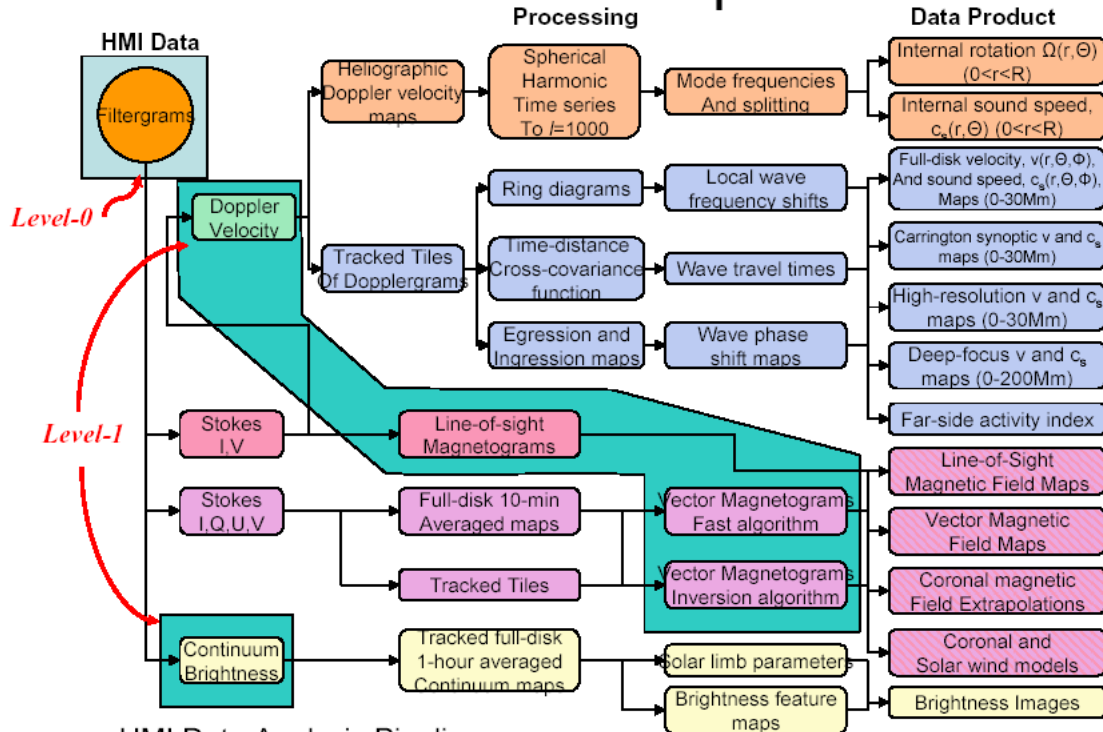
Brad Hindman / Junwei Zhao

- Junwei Zhao: Opening Remarks, 5 minutes
- Rudi Komm: Insights from Ring-Diagram, 20 minutes
- Laurent Gizon: Insights from Time-Distance, 20 minutes
- Doug Braun: Insights from Acoustic Holography, 20 minutes
- Brad Hindman: Closing Remarks, 5 minutes
- Open Discussion: 20 minutes

HMI Science Tasks Relevant to This Session

- Science Objective 1. Convection-zone dynamics and solar dynamo
 - Task 1B. Variations in differential rotation
 - Task 1C. Evolution of meridional circulations
- Science Objective 2. Origin and evolution of sunspots, active regions and complexes of activity
 - Task 2A. Formation and deep structure of magnetic complexes of activity
 - Task 2B. Active region source and evolution
- Science Objective 3. Sources and drivers of solar activity and disturbances
 - Task 3A. Origin and dynamics of magnetic sheared structures and delta-type sunspots
 - Task 3C. Emergence of magnetic flux and solar transient events

HMI - SOC Pipeline



HMI Data Analysis Pipeline

Questions We Are Going to Discuss in This Session

1. What progress has been made in this research field and what is planned for future HMI observations?
2. How can these HMI SSW maps be utilized?
3. What can they tell us about supergranular and giant-cell dynamics?
4. What are the connections to active regions and coronal magnetic fields?
5. What type of synoptic and predictive information can be obtained from these maps?
6. What physical parameters can be deduced from the SSW data (e.g., vorticity, divergence, Reynolds stresses, kinetic helicity, etc.)?
7. Where do you think we should concentrate our future efforts?
8. What problems (distinct from technique issues) need to be accomplished before launch?
9. What code development, if any, needs to be performed before launch?
10. Should we organize special meetings or working groups for this topic?