

Basic Principles of Solar Acoustic Holography

ASTR 500

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Outline

1. Introduction
2. Basic Principles of Computational Seismic Holography
3. The Computational Task
4. Subjacent Vantage Holography
5. An Example
6. Acoustic Modelling Based on Holographic Images
7. Phase-Sensitive Holography
8. Green's Functions
9. Summary

“Seismic holography” was applied to helioseismic data from SOHO. New solar acoustic phenomena:

- ▶ ‘acoustic moats’ surrounding sunspots
- ▶ ‘acoustic condensations’ 10-20 Mm beneath active regions
- ▶ ‘acoustic glories’ surrounding complex active regions
- ▶ first helioseismic images of a flare

Figure 1

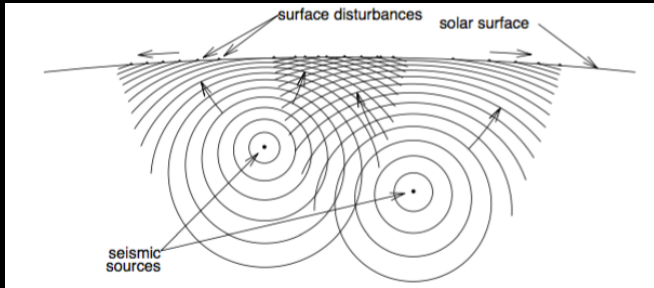


Figure: captiontext

Figure 2

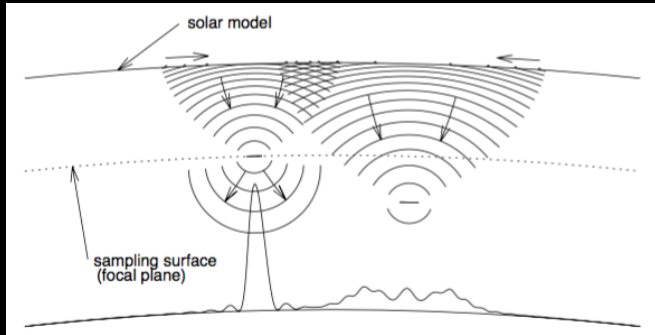


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Figure 3

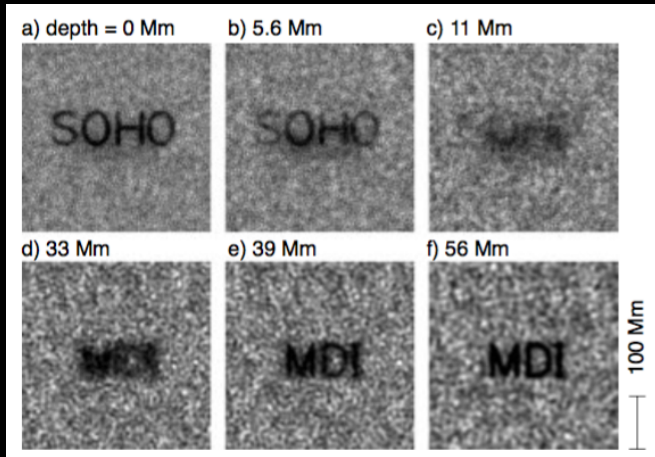


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Figure 4

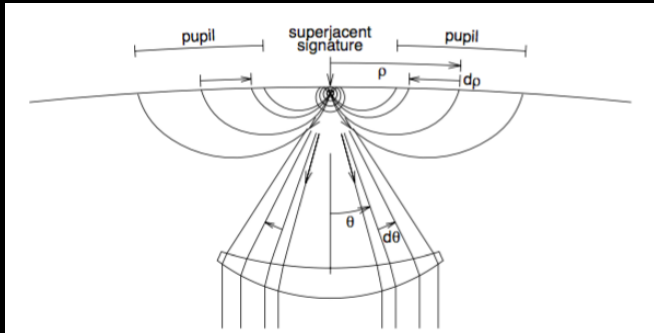


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Figure 5

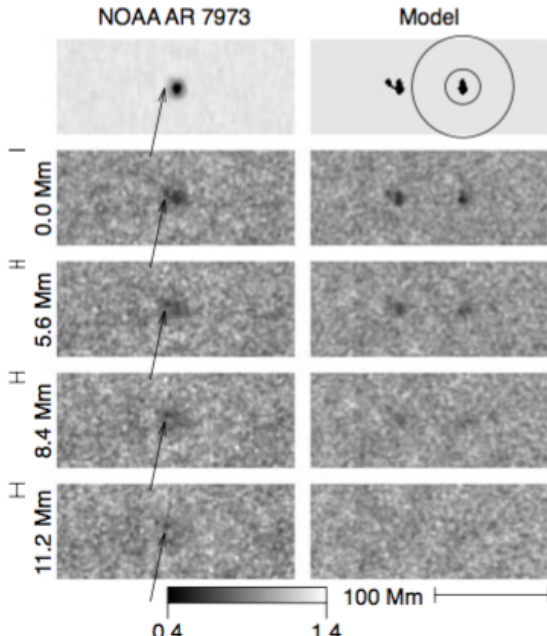


Figure 6

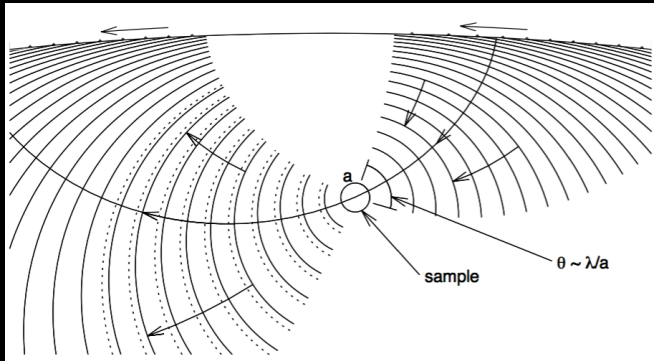


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Figure 7

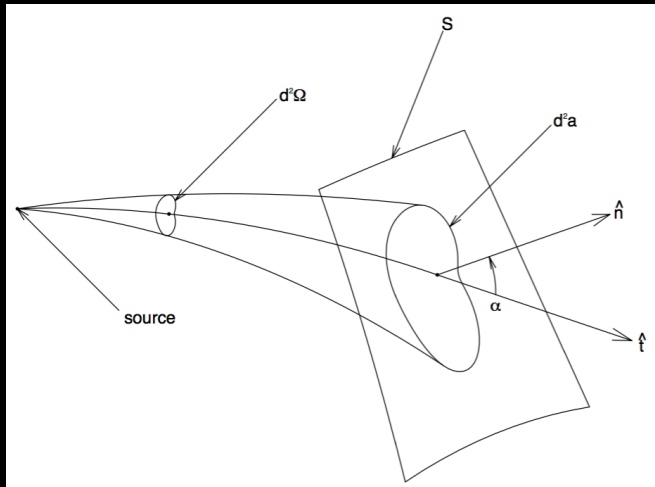


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Figure 8

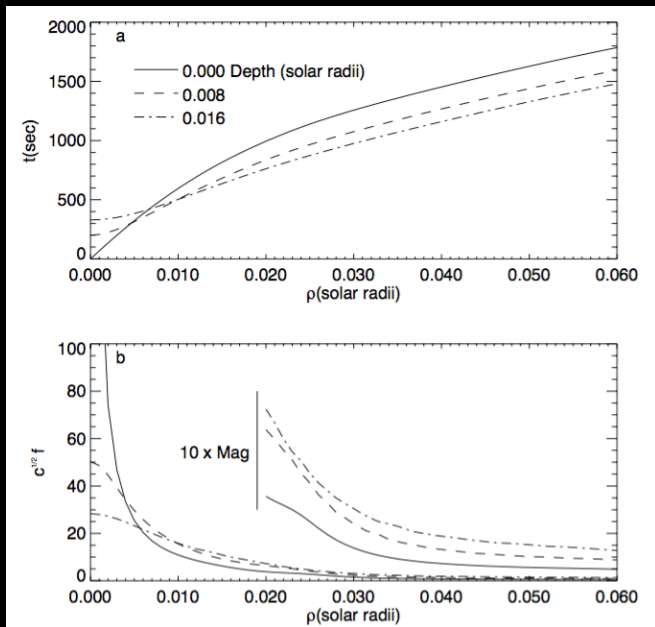


Figure 9

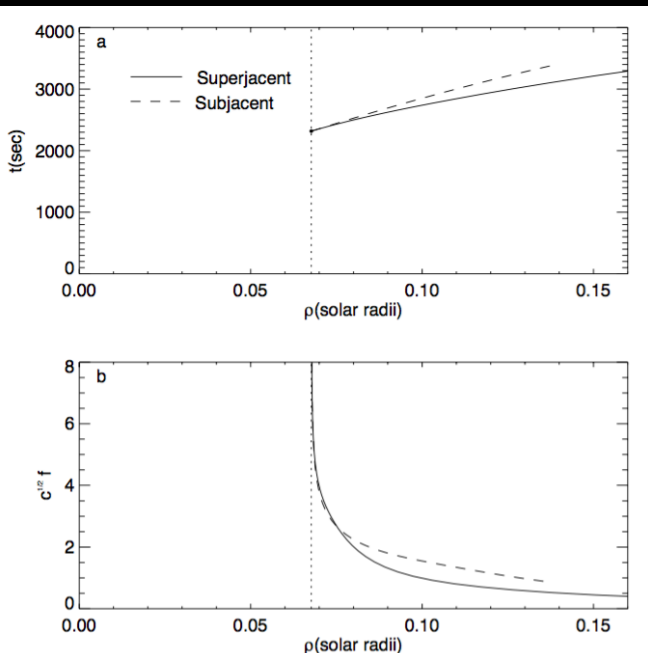


Figure 10

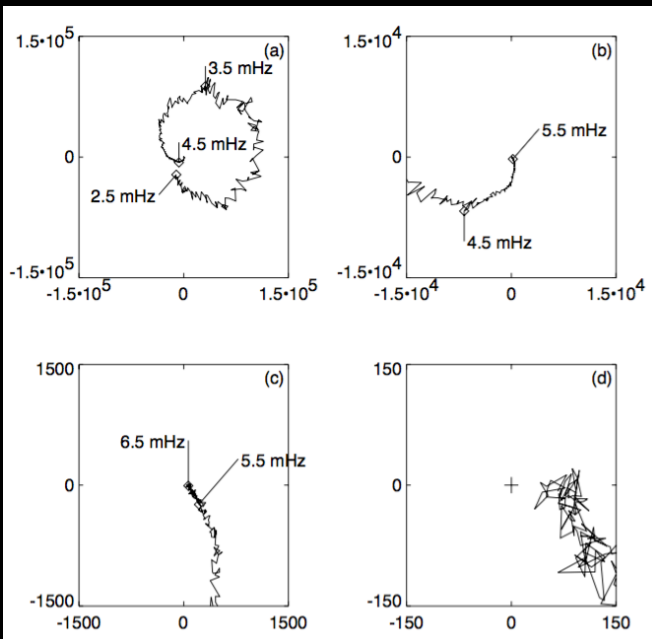


Figure 11

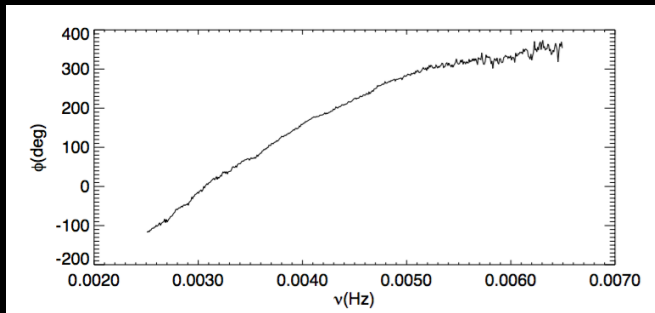


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