

Poster

Splinter Activity

## A POSSIBLE IMPROVEMENT ON HELIOSEISMIC HOLOGRAPHY

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Helioseismic holography is a powerful technique to probe the solar interior and its application of detecting active regions on the far-side of the Sun plays an important role in the space weather prediction. The basic principle of helioseismic holography is that the wavefield can be estimated by the back-propagation (in time) of the acoustic waves observed at the surface into any depth in the Sun. Porter-Bojarski holography, which is a well-established method used in acoustics to recover sources and scatterers in 3D, is also an estimation of the wavefield, and hence has the potential to be applied to helioseismology. Through a comparison of the two imaging techniques in a solar-like stratified background medium, I find that PB holography better resolves acoustic sources than helioseismic holography. In order to implement PB holography in the Sun, however, a method for determining the normal derivative of the wavefield needs to be developed.