

# Inferring solar differential rotation and viscosity via passive imaging with inertial waves

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The recent discovery of inertial waves on the surface of the Sun offers new possibilities to learn about the solar interior. These waves are long-lived with a period on the order of the Sun rotation period (~27 days) and are sensitive to parameters deep inside the Sun. They are excited by turbulent convection, leading to a passive imaging problem. In this work, we present the forward and inverse problem of reconstructing viscosity and differential rotation on the Sun from cross-covariance observations of these inertial waves.

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