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A new method for detecting solar gravity waves

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Internal gravity waves are observed in the Earth's atmosphere and oceans, on Mars and Jupiter, and in the Sun's atmosphere. Despite ample evidence for propagating gravity waves in the Sun's atmosphere, we still do not fully understand their characteristics and overall role in the dynamics and energetics of the solar atmosphere. Here we present a new approach to study the propagation of gravity waves in the solar atmosphere, which opens the door for their use in the seismic mapping of the Sun's atmosphere. Our method measures the three-dimensional cross-correlation function between the vertical velocities measured at different heights. We show some preliminary results based on the analysis of both simulations and actual observations, and we outline future developments.

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