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**Behavior of the transition region on the wave propagation at the solar atmosphere**

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### Abstract

Studying of megnetohydrodynamic waves in solar magnetic structures such as coronal loops, spicules, etc. can be very important for investigating the problem of heating the sun’s outer atmosphere. For this purpose, a magnetic flux tube was considered in the presence of steady flow and sheared magnetic field in a stratified atmospheric layer. The transition region is a boundary layer between the solar chromosphere and the corona, which has very rapid changes in temperature and density. The effect of the transition region on the damping of Alfven waves and temperature changes with height were applied in the assumed flux tube. The Cartesian two-dimensional model was used to solve the magnetohydrodynamic equations, and the results were obtained from the damping in the form of graphs of temporal and spatial changes of the perturbed velocity and magnetic field. The graphs showed that the damping of Alfven waves is more visible with time than with space, so the more rapid the damping occurs, the more energy will be transferred to the corona.

**Keywords:** sun, magnetohydrodynamic waves, steady flow, transition region

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