

ON THE HIGH FREQUENCY ALFVÉN WAVE IN POLAR CORONAL HOLES

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We study the propagation and dissipation of high-frequency Alfvén wave with period 0.001 s in the solar wind source region. We find decrement of damping length scale and energy flux density in the x-z space of the solar wind source region, which shows an efficient dissipation. This dissipation of Alfvén wave energises the solar wind particles and causes an enhanced outflow speed near the boundaries of the source region. We underline the importance of the dissipation of Alfvén wave with a period 0.001 s as one of the primary energy sources, for both inside and boundaries of the solar wind source region. The theoretical results are supported with observationally derived non-thermal velocities from the O v 629 transition region line.