[구SS-05] Photosphere and Chromosphere observation of Pores

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We have investigated vertical motions of plasma in the pores and changes of the motions with height by using high time and spatial resolutions data obtained by the Fast Imaging Solar Spectrograph (FISS) of the 1.6 meter New Solar Telescope (NST). We infer the LOS velocity by applying the bisector method to the wings of CaII 854.2 nm line profile. We find that (1) upflow velocity in the pores decreases with height and turns into downward in the upper chromosphere; (2) 3 min and 5 min oscillations are found from the Doppler velocity in the pore at various wavelengths from the wing (±2.35Å) to the core (±1.25Å) of the CaII line; and (3) power of high (low) frequency oscillation obtained from the CaII intensity increases (decreases) with height. We discuss the physical implications of our results in view of the connection of LOS plasma flows in a concentrated magnetic flux (pore) between the photosphere and the low chromosphere.

[구SS-06] Photospheric and Chromosphereic Oscillation in a Pore observed by NST/FISS

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Exploration of the wave-mode identification and its propagating property in the solar pore is desirable to study the energy transfer in the solar atmosphere. The Fast Imaging Solar Spectrograph (FISS) installed at the New Solar Telescope (NST) is a unique system that can do imaging of H-alpha and Ca II 8542 band simultaneously, which is quite suitable for studying of dynamics of chromosphere. In this study, we inspect a relationship between the cross-sectional area and intensity of the pore at continuum (-0.4 nm) near the Ca II line. We find coherent oscillations of the area and intensity. They shows out-of-phase (~ 180 degree difference) in photosphere, which implies that the oscillation is fast sausage mode. We also investigate a relationship between LOS velocities above the pore obtained from the Ca II and the Ha line cores, and find no significant difference of the phase (~10 degree) between the formation heights of the lines in chromosphere.