[구SS-13] Chromospheric oscillation signatures observed by the NST FISS

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In this study, we examined chromospheric oscillation signatures in two solar active regions, a limb active region and a sunspot with a light bridge, observed by the Fast Imaging Solar Spectrograph (FISS) of the 1.6m New Solar Telescope (NST) at Big Bear Solar Observatory. The FISS is a slit spectrograph with a fast imaging capability and can observe the solar chromosphere in Hα and Ca II 8542 Å bands simultaneously with high spectral resolutions. After dark and flat correction, we compensated for image rotation at the Coude focus and made image alignment. We estimated Doppler shifts over active regions using the bisector method and investigated the temporal and spatial fluctuations of Doppler shifts for some selected cases. And we obtain the power map by using the Lomb-Scargle periodogram technique to examine the oscillation power at different features. Finally, we will discuss our results and implications.

[구SS-14] Solar and Heliospheric 1.3-year Signals during 1970-2007

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We revisit the 1.3-year (yr) signals observed on the Sun, in the interplanetary space, and in the Earth's magnetosphere to study the coupling among signals from the three regions for about forty years (1970--2007) covering three solar cycles 21, 22, and 23. For this, we make dynamic spectra of datasets including three different regions. From this, we estimate the peak frequency around 1.3 yr for each region and the corresponding band power. We found that coherent power only appears during 1987-1995 and the coherent behavior is found only in the interplanetary space and Earth, not in the Sun. Although the solar surface magnetic field shows significant power around 1.3 yr, their peak frequencies are statistically different from those of the outer regions, which make us to dismiss the existence of coherence among the three regions. But it is notable that the peaks in band power corresponding to the 1.3-yr period are clearly simultaneous in the interplanetary space and Earth.