[구SS-13] Empirical estimation of daily artifact of HMI Doppler velocities in the umbral region

Il-Hyun, Cho[1,2], Kyung-Suk Cho[1], Su-Chan, Bong[1], Yeon-Han, Kim[1], and Young-Deuk, Park[1]
[1]*Korea Astronomy and Space Science Institute, Daejeon, Korea, 305-348*
[2]*University of Science and Technology, Daejeon, Korea, 305-350*

To investigate physical properties of Solar pores, we use SDO/HMI data from 2010 to 2013. For this, we select single and isolated pores from the active region (Axx, Bxo, Bxi and Bxc-type) listed in Solar Region Summary. Pore is defined by connected pixels satisfying the intensity threshold from pixel of minimum intensity. We try to obtain area, intensity, magnetic field, and Doppler velocity of pores from HMI data. After removing the effects of orbital motion of the SDO satellite and differential rotation of the Sun, we identify that significant daily variations of Doppler velocity with non-zero ordinates still remain in the umbral region, and the artifact is quite dependent on the strength of magnetic field and radial component of velocity of SDO satellite. In this study we develope empirical model to remove the artifact. A preliminary result on the elimination of the artifact will be presented.

[구SS-14] Plasma dynamics above a pore observed on 2013 August 24

Kyungsuk Cho[1], Suchan Bong[1], Eunkyung Lim[1], Yeonhan Kim[1], Youngdeuk Park[1], Heesu Yang[2], Jongchul Chae[2], Vasyl Yurchyshyn[3]
[1]*Korea Astronomy and Space Science Institute,*
[2]*Seoul National University,*
[3]*Big Bear Solar Observatory*

For better understanding of the physics of pores, we have investigated horizontal and vertical motions of plasma in a pore obtained on 2013 August 24 by using high time and spatial resolution data from 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 Ca II 8542 Å profile, and inspect oscillations of the intensity and the LOS velocity in the pore. In this presentation, we discuss the physical implications of our results in view of a connection between LOS and horizontal plasma flows in a concentrated magnetic flux.