

magnetic islands for understanding the process of magnetic reconnection. The total energy of magnetic reconnection maintaining the outflows for 40 hr is estimated at 1.4×10^{30} erg. Further investigations of plasma outflows along post-CME rays will shed much light on the physical properties of magnetic reconnection occurring in the solar corona.

[구 TG-06] Determination of 2D solar wind speed maps from LASCO C3 observations using Fourier motion filter

Il-Hyun Cho¹, Yong-Jae Moon¹, Jin-Yi Lee¹, Valery Nakariakov^{1,2,3}, Kyung-Suk Cho^{4,5}
¹Kyung Hee University, ²University of Warwick, ³Russian Academy of Sciences, ⁴Korea Astronomy and Space Science Institute, ⁵University of Science and Technology

Measurements of solar wind speed near the Sun (< 0.1 AU) are important for understanding acceleration mechanism of solar wind as well as space weather predictions, but hard to directly measure them. For the first time, we provide 2D solar wind speed maps in the LASCO field of view using three consecutive days data. By applying the Fourier convolution and inverse Fourier transform, we decompose the 3D intensity data (r, PA, t) into the 4D one (r, PA, t, v). Then, we take the weighted mean along speed to determine the solar wind speeds that gives $V(r, PA, t)$ in every 30 min. The estimated radial speeds are consistent with those given by an artificial flow and plasma blobs. We find that the estimated speeds are moderately correlated with those from slow CMEs and those from IPS observations. A comparison of yearly solar wind speed maps in 2000 and 2009 shows that they have very remarkable differences: azimuthally uniform distribution in 2000 and bi-modal distribution (high speed near the poles and low speed near the equator) in 2009.