

The halo CMEs' speed and energy of their related active regions

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In this study, we seek for correlation between the active region-related halo CMEs' speed and energy of the active regions. We chose the events from the Coordinated Data Analysis Workshops (CDAW) event list to carried out this research. The solar sources of the events have been carefully determined by the CDAW source identification team using various methods. This study shows that (1) there is no clear correlation between the potential energy of the active regions and the CMEs' speed; (2) there is no clear correlation between the net flux in the active regions and the CMEs' speed. The net flux may represent the large-scale magnetic flux connecting to remote areas. (3) Weak correlation was presented here between the CMEs' kinetic energy (CMEs' speed) and the free energy stored in the active regions. We will also place a discussion here.