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The Correlation Between Speed of Flare Ribbon and the Normal Component of Magnetic Field YUQIAN WEI, YAN XU, New Jersey Inst of Tech — In a simplified two-ribbon flare model, the expansion speed of flare ribbons V_r and the normal component of magnetic field B_n swept by the flare ribbons are two contributing factors in deriving the local magnetic reconnection rate, i.e., $E_{rec} = V_r B_n$. In this project, I investigate the correlation between V_r and B_n in a case study of a two-ribbon M6.5 flare (SOL2015-06-22T18:23). The morphology and evolution of one ribbon of this flare were well captured by exceptionally high resolution H-alpha images from the Visible Imaging Spectrometer (VIS) at the 1.6 m New Solar Telescope (NST), with which I am able to track the ribbon motion and calculate V_r. The photospheric line-of-sight (LOS) magnetograms, obtained with the Goode Solar Telescope(GST), are used as an approximation of B_n. Based on a sample of four sections of the ribbon, a moderate negative correlation is found between V_r and B_nThis result suggests a tendency for flare ribbons to slow down in strong magnetic field regions.

Yuqian Wei
New Jersey Inst of Tech

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