Statistical analysis of reconnection inflows observed in solar flares

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We report the observations of reconnection inflows in extreme ultraviolet (EUV) Fe XII 195 A images with the Extreme ultraviolet Imaging Telescope (EIT) onboard the Solar and Heliospheric Observatory (SOHO). Yokoyama and colleagues reported the first example observed on 18 March 1999. We survey the EIT data from 1996 to 2000, and find 6 new inflow events. We measure the inflow velocity v_inflow for each event, and find that v_inflow is about 2.6-38 km/s. Furthermore, using the 6 EIT inflow events observed simultaneously with Yohkoh/SXT (including the Yokoyama event), we calculate the reconnection rate as M_A = v_inflow / v_A = 0.001-0.07. It is also found that the plasmoid ejection and/or coronal mass ejection (CME) are closely related to the inflow. The velocity of the CME exhibits a correlation with the inflow velocity.