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Investigating the photospheric and chromospheric response of a C-class solar flare on 1 July 2012 using Swedish Solar Telescope and SDO observations

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The C-class solar flare event of 1 July 2012 13:08 UTC was observed in multiple wavelengths by the 1-m Swedish Solar Telescope (SST), providing information about the state of the photosphere, chromosphere and corona. In this study, focus is placed on the changes in sheared photospheric flow pre and post flare. Magnetic features inside the flow pattern are tracked, the borders between several counter flows and the location of different polarity inversion lines are identified, while the spatial evolution over time of the magnetic features is monitored for changes in magnetic field line tension. The magnetic flux is calculated for each magnetic feature and the velocity flow vectors are determined to show the degree of shearing pre and post flare. The SST results are combined with results from the Atmospheric Imaging Assembly (AIA) and the Helioseismic and Magnetic Imager (HMI) instruments on board the Solar Dynamics Observatory.

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