

The role of null points in large flares

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We have performed the analysis of the magnetic topology of the active region NOAA 10486 before two large flares occurring on October 26 and 28 2003. The 3D extrapolation of photospheric magnetic field show the existence of magnetic null points. We used TRACE 1600 Å brightenings as tracers of the energy release during magnetic reconnections.

We conclude on the three following points:

1. The observed small pre-events observed before the flares were related to low lying null points. They were long lasting and associated with low energy release. They were not triggering of the large flares.
2. On October 26, a high altitude null point was detected. We looked at the TRACE 1600 Å images for bright patches corresponding to a possible coronal reconnection at the null point. However no bright patch was observed before the main flare.
3. On October 28, a breakout of the large scale overlying magnetic field lines occurred but without the presence of a null point in the corona.

So, the existence of a null point in the corona is not a sufficient and/or necessary condition for getting large flares.