

# **MAGNETIC FIELD DISSIPATION IN THE FLARE JULY 23, 2002 MEASURED WITH SOHO/MDI AND ITS CORRELATION WITH HARD X-RAY EMISSION**

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The line-of-sight (LOS) magnetic field variations associated with the flare 23 July 2002 occurred in a bipolar area around an apparent neutral magnetic line (ANL) located with the automated dual distance technique. We located 4 pre-existing sources of a strong magnetic field of 400-600G of positive and negative polarities before the flare occurrence and 2 new sources of -450 G and -550 G appearing at the time when ANL starts moving in a close location to the biggest ANL movement with a speed of 250 km/s. In the other two from four hard X-ray footpoints located on the east from ANL with the strongest negative LOS magnetic field the irreversible magnetic field growth was measured that started 2 minutes prior the flare, increased by 110 G and stayed at this level after the flare offset. The magnetic field changes in both photospheric sources were irreversible showing an increase of magnetic flux from  $6 \cdot 10^{20}$  Mx up to  $1 \cdot 10^{21}$  Mx lasting until 00:35:00 UT when the magnetic field returned to noise fluctuations about this new magnitude. The rate of irreversible LOS magnetic changes, possibly, caused by a magnetic reconnection during the flare, was about  $2 \cdot 10^{18}$  Mx/s and the Poynting flux was about  $2 \cdot 10^{12}$  erg/cm<sup>2</sup>/s that results in the magnetic energy of  $\sim 1 \cdot 10^{32}$  erg to be released during this flare from the LOS magnetic variations. Possible applications of the global reconnection models with quasi-separatrix layers to the observed magnetic changes are discussed.