

POSSIBLE DIAGNOSTICS OF FAST MAGNETIC FIELD VARIATIONS ASSOCIATED WITH FLARES

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Solar flares are very powerful manifestations of solar activity. Understanding the mechanisms of their energy release and transport in these events contains a key to the processes of solar activity as such and their consequences on the Earth atmosphere. The primary energy release source in flares is commonly assumed to be a magnetic field. Here we report on fast magnetic field variations associated with flares observed with SOHO/MDI. Some of these variations (flare of 02/05/98) look like the waves propagating outwards the flare site, they are also accompanied with the coronal and Moreton waves. The others (flare of 14/07/00) reveal the fast magnetic field variations of two types: the irreversible ones with the total magnetic energy decrease during the flare and reversible ones with the magnetic energy decreasing during the flare and restoring its original value after the flare. The irreversible variations show a very close correlation with hard and soft X-ray emission from the flare. These observations provide essential information for the interpretation of magnetic processes causing active solar events.