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Variations of current helicity in active region 10930 as inferred from Hinode/SP Magnetograms

Vasyl Yurchyshyn

Big Bear Solar Observatory

Valentyna Abramenko

Big Bear Solar Observatory

Hiroko Watanabe

Kwasan and Hida Observatories, Kyoto University

Abstract. As we have shown earlier current helicity, calculated using measurements of photospheric magnetic field vector, possesses a well-pronounced scaling behavior. The sign singularity of two-dimensional structures of current helicity, can be studied by introducing a signed measure and by calculating the power-law exponent (cancellation exponent). The time variations of this exponent seem to be related to flare activity of an active region: periods of enhanced flaring are accompanied by an decrease subsequent rise of the cancellation exponent. Here we focus on the variations of current helicity structure in active region 10930 as measured from a set of Hinode SP magnetograms and compare our findings with other reports on evolution of active region 10930.