CORK MAP AND DIVERGENCE MAP OF AN ACTIVE REGION

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Abstract. The horizontal motion and the velocity field in the solar photosphere in the presence of a sunspot and associated pores is studied by means of a local correlation tracking algorithm (LCT) of a 40 minute time series of broadband images. The observation took place on June, 17 1998 at the VTT, Tenerife and the wavelength band used was centered at the non-magnetic Fe I line at 5576 Å. A cork map and a divergence map are presented which give information about the horizontal motion and sources and sinks of this plasma motion.

Key words: active region - motion - photosphere

1. Introduction

The data were obtained at the VTT, Tenerife, June, 17 1998 by using a broadband filter at the wavelength band of 5576 Å, a non-magnetic Fe I line which forms in the photosphere. The data reduction and restoration follows the procedure described in detail in Sobotka (2000). Applying a local correlation tracking (LCT) algorithm we computed the horizontal velocity referring to the field of view which spreads over about 70 × 70 square seconds of arcs. The field of view contains a sunspot (umbra and penumbra) as well as associated pores which influence and disturb the horizontal outward motion of the plasma away from the sunspot.