Interpretation of second solar spectrum observed at the Pic-du-Midi and THEMIS

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The Hanle effect is actually the only tool for measuring turbulent (i.e. spatially unresolved) magnetic field at the surface of the quiet Sun.

The Hanle effect diagnostics relies on the discrepancy between the linear polarization calculated in the absence of a magnetic field and the observed polarization.

We will present our results obtained by Hanle effect interpretation of the linear polarization of the SrI 4607 line observed at the Pic-du-Midi (2004 May 14) and THEMIS (2002 December 7-9).

In particular, the talk will stress the importance of a proper adjustment of the theoretical intensity profile to the observed by applying a zero-field model, the magnetic field being determined in a second step from the line center polarization degree.

Furthermore, we discuss how important is the isotropic collisions in the magnetic field determinations.

With the spatial resolution that we have now at the Pic-du-Midi (1 arcsec, 132 limb distances), we provide depth probing of the turbulent magnetic intensity and we discuss whether its strength vary within the range of the heights of formation of the line center.

Références:

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