Contributed Talk

Splinter HiRes

Spectropolarimetric inversions using spectral lines formed in non-local thermodynamic equilibrium

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Strong spectral lines which provide diagnostics of higher layers of the solar atmosphere are usually formed in so called non-local thermodynamic equilibrium (NLTE). This makes calculation of the emergent Stokes spectrum computationally demanding, which is especially important in the context of so called spectropolarimetric inversions. In this contribution we present our take on this problem. We present a semi-analytical method for computing response functions of NLTE lines to atmospheric parameters which significantly speeds-up the inversion procedure. We then comment of diagnostic capabilities of Na D1 and D2 spectral lines and discuss the eventual inversions using the spectral window around this line pair.