

Spectropolarimetric Diagnostics of the Solar Chromospheric Fibrils using DKIST/ViSP Observations

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The chromosphere is a critical layer of the solar atmosphere situated between the photosphere and the corona. Studying its temperature structure is important to understand the complex dynamics and energy transfer process through these layers. We study the magnetic and thermal structure of chromospheric fibrils and an adjacent plage region using high-resolution DKIST/ViSP observations. In particular, we analyze the Ca II 854.2 nm spectral profiles of the observed region and infer the magnetic and thermal stratification with optical depth. We focus on the run of magnetic field strength, density and temperature along the length of the fibrils, as inferred with the NLTE inversion code NICOLE applied to our observations of very high spatial and spectral resolution.