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Inference of $\log(gf)$ values for atomic lines in NUV spectral range

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The third flight of the Sunrise observatory carries the new Sunrise UV Spectropolarimeter and Imager (SUSI) which will cover the spectral range from 310 nm to 410 nm. In this region, the number density of spectral lines is at least four times larger than in the visible/infrared part of the spectrum, including a significant number of chromospheric lines. To extract accurate physical parameters of the solar atmosphere from observations with SUSI we need precise atomic line parameters, e.g., the $\log(gf)$ value. Here we review an extension of the spectropolarimetric inversion scheme to account for coupled inversion of atomic line parameters. In this scheme, atomic line parameters are inverted using information from the whole field of view. Additionally, we discuss the potential of this inversion scheme using synthetic spectra computed from 3D realistic magnetohydrodynamic simulations.

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