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Spectral inversion of simultaneous MSDP $H\alpha$ and IRIS Mg II k & h lines in a quiescent prominence

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Based on simultaneous spectroscopic measurements in the $H\alpha$ line and the Mg II k & h lines, Guiping et al. (2019) arrived at two solutions by comparing the observed and synthetic parameters of the $H\alpha$ line with 1D non-LTE modeling. They obtained relatively high temperatures at a microturbulent velocity of 8 km/s, while the temperatures at 16 km/s were standard values. Here we want to investigate the behavior of this prominence in more detail. We analyze both the $H\alpha$ line and the two Mg II lines detected by IRIS and compare the observed and synthetic profiles for all lines using five different spectral parameters. The analysis is based on spectral inversions using an extended grid of prominence 1D slab models. Preliminary results will be presented together with 2D maps of various physical parameters, and we will discuss our best-fit solutions with respect to the radiative-equilibrium models.

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