Spectral synthesis of CARMENES M-type stars: stellar atmospheric parameters.

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Abstract

We show our very first results regarding the stellar atmospheric parameter determinations (T_{eff}, $\log g$, [Fe/H]) of M-type stars observed with CARMENES [3] by means of the spectral synthesis method. We have selected spectral ranges around iron and titanium lines and molecular bands in three reference M-type stars: GX And (M1.0 V), Luyten's star (M3.5 V), and Teegarden's star (M7.0 V). We employ PHOENIX stellar model atmospheres [2], the radiative transfer code TurboSpectrum [1] and line data from the VALD3 database [4] to obtain a grid of synthetic spectra, and a Markov Chain Monte Carlo process implemented in STEPARSYN code [5] to derive the value of the stellar atmospheric parameters. (See poster).

Acknowledgments

References

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