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The abundance signature of low-mass stars with planets.

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Methods to derive in a consistent way stellar abundances of low-mass stars from optical spectra are still missing. In this contribution we present a first attempt to fill this gap. Our methodology is based on the use of principal componen analysis and sparse Bayesian's fitting methods. A set of M dwarfs in binary systems orbiting around an FGK primary was observed and is used to training our methods. We use our results to test whether the correlations between the metallicity, individual chemical abundances, mass of the star and the presence of different type of planets found for FGK stars still holds for the less massive M dwarf stars.

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