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TRIPLE IONIZED MOLYBDENUM LINES IN THE SPECTRA OF THE DA-TYPE AND THE DO-TYPE WHITE DWARFS

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Molybdenum is trans-iron element and the most serious problem for the determination of these element abundances is the lack of atomic data. Investigations of the spectrum of the white dwarf RE 0503-289 indicate the presence of lines of multiply ionized elements such as Ga, Kr, Mo and Xe. Extreme overabundances of trans-iron elements are seen in DO white dwarfs, in a temperature range from 49500 K up to 70000 K.

In this context, we considered the lines of triply ionized molybdenum in the spectra of white dwarfs, especially of DA and DO type. Differences in the contributions of spectral line broadening for two different types of white dwarfs are due to different physical conditions, since effective temperatures and surface gravities are different .

More than ten 5s - 5p transitions of Mo IV of interest for the calculation of Stark broadening parameters, width and shift, were selected. A simple modified semi-empirical approach by Dimitrijević and Konjević, 1987 was applied. The obtained results may be particularly useful for determination of molybdenum abundances in white dwarfs and for laboratory plasma diagnostics.