

**THE IMPACT OF IMPROVED STARK-BROADENING WIDTHS
ON THE MODELLING OF DOUBLE-IONIZED CHROMIUM
LINES IN EARLY-TYPE STARS**

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Stellar atmosphere modeling and chemical abundance determinations require the knowledge of spectral line shapes. Spectral lines of chromium in various ionization stages are common in stellar spectra but detailed data on Stark broadening for them is scarce. Recently we reported on the first calculations of Stark widths for several 4s-4p transitions of double-ionized chromium, employing the Modified Semi-Empirical approach (MSE). In this work we present applications of the data to spectrum synthesis of Cr III lines in the ultraviolet region of early-type stars. The ATLAS9 model atmosphere code and the line-formation code SURFACE were used assuming local thermodynamic equilibrium. The impact of adopting the MSE broadening tables instead of approximate Stark broadening coefficients are investigated for a total of 56 Cr III lines visible in HST/STIS spectra of the B3 subgiant star Iota Hercules and the subdwarf B-star Feige 66.