How Hot are Hot Stars?: New Temperatures for mid-O types from FUSE data

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We analysed high resolution spectra of Galactic O-type stars from the far-UV to the optical. We combined spectra from the Far Ultraviolet Spectroscopic Explorer (FUSE) in the range 905-1187Å, IUE or HST archive spectra (1150-3300Å), and optical blue and Hα spectra from the La Palma INT. The spectra were analysed with line-blanketed, hydrodynamic, non-LTE models to derive photospheric parameters, mass loss rates and wind velocities. In the UV and far-UV range, the model spectra were computed with the WM-BASIC code (Pauldrach et al. 2001, A.A. 375, 161). In the optical range two different modelings were attempted.

Preliminary results for mid-O types indicate that the temperatures are $\approx$ 2000 to 5000 K lower than the canonical values currently assumed for their spectral types. The uncertainties are much lower than the discrepancy. The new results may be in part due to the new modeling techniques, but the lines in the far-UV range, such as OVI and PV, in addition to the NIV, NV, SiIV, CIII and CIV lines in the IUE range, play a crucial role in constraining the stellar parameters, and in assessing the role of shocks in the wind ionization.

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