The commonly used extinction laws of Cardelli et al. (1989) have limitations that, among other issues, hamper the determination of the effective temperatures of O and early B stars from optical+NIR photometry.

Aims: We aim to develop a new family of extinction laws for 30 Doradus, check their general applicability within that region and elsewhere, and apply them to test the feasibility of using optical+NIR photometry to determine the effective temperature of OB stars.

Methods: We use spectroscopy and NIR photometry from the VLT-FLAMES Tarantula Survey and optical photometry from HST/WFC3 of 30 Doradus and we analyze them with the software code CHORIZOS using different assumptions such as the family of extinction laws.

Results: We derive a new family of optical+NIR extinction laws for 30 Doradus and confirm its applicability to extinguished Galactic O-type systems. We conclude that by using the new extinction laws it is possible to measure the effective temperatures of OB stars with moderate uncertainties and only a small bias, at least up to E(4405-5495) ~ 1.5 mag.

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