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Towards a comprehensive view of the Carina Nebula through the spectroscopic study of its O-star population

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Abstract

The Carina Nebula is one of the major and more massive regions of our Galaxy that contains a large number of massive O-type stars that can be analyzed. Benefiting from astrometry by *Gaia* DR3 and high-quality spectra from different surveys and stellar libraries, a detailed spectroscopic characterization of its O-type stellar content can be performed. To this aim, a high-degree of completeness in the census of its early-type population is mandatory.

In this contribution we present the most complete census of OB stars ever done in Carina, including an updated estimate of the binary fraction of O stars and potential OB runaway candidates. Using high-resolution *Gaia*-ESO Survey (GES) and OWN spectra, we derive accurate rotational and stellar parameters for the O population in the region, obtaining a reliable distribution of rotational velocities and the Hertzsprung-Russell Diagram, from which we inspect the main physical properties of cluster members and test theoretical evolutionary models.

My poster in zenodo.org can be found here