

## **ABSTRACT**

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### **Far-infrared and (sub-)mm studies of the strongly irradiated clouds and cores in the Carina Nebula, the nearest laboratory of massive star feedback**

The Carina Nebula contains some of the most massive and luminous stars in our Galaxy and is the best site to study in detail the physics of violent massive star formation and the resulting feedback effects, i.e. cloud dispersal and triggering of star formation. With a distance of 2.3 kpc, it constitutes our best bridge between nearby regions like Orion and the much more massive, but also more distant extragalactic starburst systems like 30 Doradus.

We present first results of a comprehensive multi-wavelength study of the Carina Nebula. Our new X-ray and near-infrared surveys are combined to large-scale Spitzer maps in order to reveal and characterize the full stellar population. Our wide-field sub-mm map, on the other hand, shows the morphology of the cold clouds in unprecedented detail. Planned Herschel observations with SPIRE and PACS will yield a complete inventory of all individual clouds and allow us to reliably determine individual cloud temperatures, column densities, and thus masses. Herschel can detect the youngest and most deeply embedded protostars (down to 0.1 Msun) and reveal the small-scale structure and the fragmentation of the irradiated clouds. Herschel will thus serve as an important pathfinder for future ALMA observations of the most interesting cloud cores and protostellar objects with yet higher angular resolution.